

## **TECHNICAL FISHERY REPORT 93-02**

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Alaska Department of Fish and Game  
Commercial Fisheries Management  
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### **Abundance, Age, Sex, and Length of Chinook, Sockeye, Coho, and Chum Salmon Returning to Upper Cook Inlet, Alaska, in 1990**

by

**David L. Waltemyer**

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State of Alaska

Walter J. Hickel, Governor

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ABUNDANCE, AGE, SEX, AND LENGTH OF  
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## **ABSTRACT**

All five species of Pacific salmon *Oncorhynchus* are found in Upper Cook Inlet. In 1990 commercial harvests of chinook salmon *O. tshawytscha*, sockeye salmon *O. nerka*, coho salmon *O. kisutch*, and chum salmon *O. keta* and spawning escapements of sockeye salmon were sampled to estimate age, sex, and length composition. Chinook salmon were represented by 11 age groups, of which ages 1.2, 1.3, and 1.4 predominated. Sockeye salmon were characterized by 15 age groups, of which the predominant age groups were 1.2, 1.3, 2.2, and 2.3. Coho salmon were represented by five age groups, 1.1, 2.1, and 3.1 predominating. Chum salmon were only sampled in the Central District drift gillnet fishery. Dominant age groups were 0.3 and 0.4. Generally, length composition and sex ratios favored males within species and location. The overall exploitation rate of sockeye salmon for all ages combined was 0.744.

**KEY WORDS:** Salmon, *Oncorhynchus*, age, length, weight, commercial catch, escapement, Upper Cook Inlet, Alaska

## INTRODUCTION

Age and size composition of adult sockeye salmon *Oncorhynchus nerka* has been characterized in Upper Cook Inlet (UCI) since 1964 (Davis and Tarbox 1985). However, in 1978 the Alaska Department of Fish and Game (ADF&G) initiated a comprehensive age-weight-length (AWL) sampling program of sockeye salmon in UCI (Figure 1). Since 1978 there have been program modifications to incorporate sampling of chinook salmon *O. tshawytscha*, chum salmon *O. keta*, and coho salmon *O. kisutch*.

Collection of age, sex, and size data has been an integral component of the research conducted in UCI. Historical age-specific information has been compiled by Cross (1985), Cross et al. (1987), Davis et al. (1984), and Waltemyer (1989, 1990, 1991). This report is part of this continuing series. The program objectives were to (1) report the commercial, sport, subsistence, and personal use salmon catches and river escapements or spawners; and (2) estimate age, sex, and size composition of adult salmon in monitored commercial catches and escapements.

### *Description of Fisheries*

Upper Cook Inlet is divided into two districts and eight subdistricts for regulation of commercial fisheries (ADF&G 1990; Figure 2). The Northern District includes the waters north of Boulder Point. The Central District includes the waters south of Boulder Point to Anchor Point. The Northern District is divided into two subdistricts, General and Eastern, in which only set gillnet fisheries are allowed to operate. The Central District is divided into six subdistricts, Western, Kustatan, Kalgin Island, Upper, Lower, and Chinitna Bay, in which both set and drift gillnet fisheries can occur (Figure 2). The Upper Subdistrict is further divided into three set gillnet fisheries separated by the Kenai and Kasilof Rivers on the western shore of the Kenai Peninsula, Cohoe/Ninilchik Beach, Kalifonsky Beach, and Salamatof Beach (Figure 2). In addition, a drift gillnet fishery is allowed to operate in all open waters of the Central District. These districts and subdistricts were established in 1976. Fishing is typically open on Mondays and Fridays for 12-h periods between late June and mid-August.

The Alaska Board of Fisheries (BOF) created one subsistence and five personal use fisheries in Upper Cook Inlet. A subsistence chinook salmon fishery, having an allowable harvest of 4,200 fish, was established in the vicinity of Tyonek in 1981 (Figure 3). A management plan for a personal use dip net fishery for sockeye salmon in the Kenai and Kasilof Rivers was approved in 1981 (Figure 3). The Kenai River dip net fishery begins when an escapement of 700,000 sockeye salmon is projected for the current year. The Kasilof River dip net fishery begins when an escapement of 150,000 sockeye salmon is also projected in-season. In 1986 a personal use dip net fishery was established at the mouth of Fish Creek for sockeye salmon. The Fish Creek dip net fishery begins when the sockeye salmon escapement is projected to exceed 50,000. In 1982 the BOF created a personal use set gillnet fishery adjacent to the mouth of the Kasilof River which opens on 21 June and closes by emergency order when the quota of 5,000 to 10,000 sockeye salmon is reached. Created by the BOF in the spring of 1983, a personal use gillnet fishery for coho salmon, north of the Kasilof River to Point Possession along the eastern shoreline of Cook Inlet, takes place on the last three weekends of September and is closed when 2,500 coho salmon are caught.

## METHODS

### *Abundance Data*

#### **Commercial, Subsistence, Personal Use and Sport Harvest**

Commercial catch statistics were compiled from fish ticket information by ADF&G, Division of Commercial Fisheries personnel. Catch data from the Tyonek subsistence fishery were compiled from returned permits (J. Fox, ADF&G, Soldotna, personal communication). The Kasilof personal use gillnet fishery was monitored by compiling personal interviews to estimate harvest. The Fish Creek dip net fishery catch was monitored by interviews with fishermen (L. Engel, ADF&G, Palmer, personal communication). The Central and Northern District personal use coho salmon fishery was monitored by aerial surveys and telephone interviews (J. Fox, ADF&G, Soldotna, personal communication). Major sport fishery harvests were monitored by creel census, interviews or aerial surveys (D. Nelson, ADF&G, Soldotna, personal communication).

#### **Escapement**

The Division of Commercial Fisheries used Bendix Corporation<sup>1</sup> side-scanning sonar to enumerate returns of sockeye salmon to the Kenai, Kasilof, Crescent, and Yentna Rivers (King and Tarbox 1991). Sonar counts were apportioned to species using proportions from fish wheel catches. Aerial and ground surveys of tributaries in the Kenai, Kasilof, Susitna and Westside Rivers were conducted by ADF&G, U.S. Forest Service and U.S. Fish and Wildlife Service personnel.

The Division of Sport Fish (ADF&G) monitored salmon escapements in selected indicator streams throughout Cook Inlet using a variety of methods (Nelson 1990). Aerial and ground surveys to index chinook salmon escapements were done for several Cook Inlet westside streams, Susitna River tributaries, and the Little Susitna River (Engel 1990). Aerial surveys were conducted for chinook salmon index streams in lower Kenai Peninsula, Anchor River, Deep Creek, and Ninilchik River. Chinook salmon escapement into the Kenai River was estimated using sonar equipment in the lower river (Skvorc 1990). Sockeye salmon escapement in Russian River was determined from weir counts (J. Carlon, ADF&G, Soldotna, personal communication). Chinook salmon escapement was monitored through a weir in Crooked Creek (B. Och, ADF&G, Soldotna, personal communication). Escapement of sockeye salmon and coho salmon was determined at a weir on Fish Creek (B. Chlupach, ADF&G, Big Lake, personal communication).

Cook Inlet Aquaculture Association (CIAA) personnel monitored sockeye salmon escapements using weirs on Hidden Creek and Packers Creek. A mark-recapture procedure was used to estimate the escapement into Chelatna Lake (G. Fandrei, CIAA, Soldotna, personal communication).

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<sup>1</sup> Use of a company's name does not constitute endorsement.

### *Age, Sex, and Size Data*

#### **Measurements**

Scales were taken from the left side of each sampled fish approximately two rows above the lateral line on the diagonal row which extends down from the posterior insertion of the dorsal fin (Koo 1955). Scales were mounted on gum cards and impressions made in cellulose acetate as described by Clutter and Whitesel (1956).

Ages of salmon were determined by examining scales for annual growth marks using criteria established by Mosher (1969). Ages were recorded in European notation (Koo 1962).

Sex and length information was recorded for all species sampled. To determine sex of the fish, morphological characteristics such as jaw formation were used. Length was measured from mid-eye to fork-of-tail in millimeters; chinook salmon were measured to the nearest 5 mm. Weight was recorded to the nearest 0.1 kg.

#### **Commercial Harvest and Escapement**

Age, sex, and size composition of the commercial catch was estimated using a stratified systematic sampling design (Cochran 1977). Following Thompson (1987), we set a minimum sample size of 400 readable scales for each species and strata to simultaneously estimate the proportion of each major age class in the harvest within 5% of the true proportion 90% of the time. A sample size of 600 fish per strata for sockeye salmon harvested in the commercial fisheries was set to account for unreadable scales and stock identification needs (B. Cross, ADF&G, Anchorage, personal communication). In addition, sample size goals of 200 fish for estimating length and 100 fish for estimating weight were established to conform to precision standards outlined above.

The number of temporal and spatial strata selected for sampling differed among commercial fisheries, escapements, and species. In general, the number of temporal strata was set to detect changes in age composition during the season. Spatial strata for commercial harvests were defined based on UCI management district or subdistrict designations. Frequency and priority of sampling were based on the relative catch contribution of a fishery to the total UCI commercial harvest. Escapements of sockeye salmon were sampled at existing sites on the major rivers.

#### **Subsistence, Personal Use, and Sport Harvest**

Age and size information was not obtained from subsistence and personal use harvests.

## RESULTS AND DISCUSSION

### *Abundance Data*

The regular commercial fishing season began on 25 June. Exceptions were the Kustatan Subdistrict sockeye fishery that began on 25 May, the Western Subdistrict salmon fishery on 18 June, and the Northern District chinook fishery on 4 June.

The total commercial salmon harvest for Upper Cook Inlet was 5,077,526 fish in 1990 (Table 1). This total represented 16,106 chinook, 3,604,099 sockeye, 502,256 coho, 603,649 pink, and 351,416 chum salmon. The chinook salmon catch was equal to the long-term 1966–89 average of 16,081 fish but well below the short-term 1980–89 average of 23,515 fish. The sockeye salmon harvest was above the long-term average of 2.5 million fish but below the short-term average of 4.4 million fish. The coho harvest was well above the long-term average of 341,503 fish but slightly below the short-term average of 528,407 fish. The chum salmon catch was poor relative to the long-term (685,904 fish) and short-term (754,396 fish) averages. The pink salmon catch was also well below the even-year long-term (1,178,163 fish) and short-term (993,784 fish) averages.

The only subsistence fishery in Upper Cook Inlet, conducted in the vicinity of the village of Tyonek, harvested 797 chinook, 92 sockeye, 366 coho, 124 pink, and 10 chum salmon (Table 2).

Personal use fisheries contributed to a harvest of 182 chinook, 17,196 sockeye, 3,408 coho, 349 pink, and 7 chum salmon (Table 2). The largest personal use harvest, 7,219 sockeye salmon, occurred in the Kasilof River set gillnet fishery.

Sport catches for major fisheries contributed approximately 37,070–40,570 chinook, 173,970 sockeye, and 54,602 coho salmon (Table 2). The largest catch of chinook salmon, 12,000 to 15,000 fish, was reported from tributaries on the west side of the Susitna River. The largest sport harvest of sockeye salmon totalled 56,175 fish and occurred in the late run to the Russian River. The Kenai River contributed to the largest sport catch of coho salmon, 45,342 fish from the early and late runs.

Chinook salmon escapements included 8,656 early-run fish and 25,770 late-run fish in the Kenai; 46,319 were counted in the Susitna River (Table 3).

Sockeye salmon escapements included 571,940 fish in the Kenai River, 137,305 in the Kasilof River, 52,238 in the Crescent River, 31,868 in Packers Creek, 140,290 in the Yentna River, and 48,717 in Fish Creek (Table 3).

Estimates of spawning escapement for coho, pink, and chum salmon represent indices of abundance, i.e., not absolute counts, in the Yentna River (Table 3). Yentna River escapement indices were 21,346 coho salmon, 244,569 pink, and 33,566 chum salmon (Table 3).

### *Age, Sex, and Size Data*

A total of 1,393 chinook, 29,089 sockeye, 5,098 coho, and 2,234 chum salmon were sampled in Upper Cook Inlet catches and escapements in 1990 (Table 4). Age, sex, and size data for each species sampled are presented below.

#### **Chinook Salmon**

The overall chinook salmon harvest was composed of 11 age groups, and dominated by age 1.3 (37.6%) and age 1.4 (35.2%; Table 5; Figure 4). Fish aged 1.4 represented the largest percentage in the Upper Subdistrict catch (33.2%). In contrast, age-1.3 fish represented the largest component (41.7%) in the General Subdistrict catch. Age-1.2 fish represented large portions of the Upper Subdistrict catch (29.1%) followed by the Eastern (15.9%) and General (20.8%) Subdistricts catches.

Chinook salmon sampled in the Upper Subdistrict were generally larger by age than fish in the Eastern or General Subdistricts except for age-1.3 fish (Tables 6–8). Mean lengths for age-1.3 and -1.4 fish ranged from 763 to 807 mm and 914 to 979 mm. Females were usually larger in size than males for fish <5 years old and smaller in size for fish >5 years old.

Male:female sex, ratios were 0.8:1 in the Eastern and General Subdistricts and 2.1:1 in the Upper Subdistrict (Tables 6–8).

#### **Sockeye Salmon**

Sockeye salmon age 1.3 represented 48.8%, 2.3 represented 24.6%, 1.2 represented 14.1%, and 2.2 represented 10.2% of the UCI commercial harvest and escapement combined (Table 9). Age-1.3 sockeye salmon contributions ranged from 36.9% in the Cohoe/Ninilchik set gillnet fishery to 64.8% in the General Subdistrict set gillnet fishery. For the major river systems, escapements of age-1.3 fish represented from 20.6% in the Kasilof River to 51.4% in the Crescent River. Depending on location, the age composition was quite variable. In general, age composition of the commercial fisheries reflected the age composition of the associated river escapements (Figure 5).

Exploitation rates were quite variable, ranging from 0.080 for age 1.1 to 0.847 for age-1.3 (Table 9). The overall exploitation rate for all ages combined was 0.744.

Differences in age composition of sockeye salmon were observed between commercial harvests and escapements (Figures 6–10; Tables 10–26). Fish aged 1.2 composed less than 10% of the harvest in the drift gillnet fishery, whereas age 1.3 and 2.3 fluctuated to a greater degree (Figure 6). Similar to the Upper Subdistrict set gillnet fisheries, Cohoe/Ninilchik Beach maintained relatively constant percentages by age group throughout the fishery (Figure 7), whereas Kalifonsky and Salamatof Beach fisheries data indicated major changes in age composition, primarily of age 1.3 (Figure 8, 9). Changes in age composition were observed in the Kenai, Kasilof, Yentna, and Susitna Rivers (Figure 10). The most

noticeable difference in age composition was observed in the Kenai River. Age-1.3 fish decreased as ages 1.2 and 2.3 increased from the beginning of July to mid-August; age-2.3 fish represented the highest percentage (21.1%) contribution since the sampling program started in 1972. The age-2.2 contribution (33.2%) to the Kasilof River was the highest since 1976.

Mean length of age-1.3 sockeye salmon, the most dominant age group, ranged from 549 mm in the Eastern Subdistrict set gillnet fishery to 573 mm in the drift gillnet fishery (Table 27). Within age groups and between commercial fisheries showed wide variability. However, a mean length-at-age comparison of the Upper Subdistrict fisheries to the Kenai and Kasilof River escapements showed generally that fish sampled in commercial fisheries near a particular river reflected the river's size composition. For example, the Cohoe/Ninilchik Beach fishery sample was similar in size to the Kasilof River size composition. With a few exceptions, fish sampled in the Salamatof and Kalifonsky Beach fisheries were similar in size to the Kenai River. Mean length-at-age of males and females were approximately equal in most of the commercial fisheries and escapements for all sampling periods combined (Tables 10–27). In the Susitna River males were 560 mm and females 524 mm on the average. Kenai River males were 548 mm and the females 533 mm on the average.

Male:female sex ratios were quite variable and ranged from 0.5:1 in the General Subdistrict to 1.2:1 in the Cohoe/Ninilchik and Kalifonsky Beach fisheries (Figure 11; Tables 10–27).

### **Coho Salmon**

Commercial harvest and escapement samples of coho salmon were dominated by three major age groups, although five age groups were present (Table 28; Figure 12). Age-2.1 (79.2%) and -1.1 (15.2%) coho salmon composed the largest portions of the areas sampled. Coho aged 2.1 contributed from 77.5% to commercial catches in the Upper Subdistrict to 82.0% in the General Subdistrict. The age-1.1 coho contribution to the commercial catch and escapement ranged from 11.8% in Fish Creek to 18.3% in the Upper Subdistrict. Escapement in Fish Creek was composed primarily of age 2.1 (80.0%).

Mean length-at-age of age-2.1 coho salmon ranged from 517 mm in Fish Creek to 557 mm in the General Subdistrict (Tables 29–33). Mean lengths-at-age among the commercial fisheries and escapement samples were similar for ages 1.1 and 2.1 but quite different for ages 3.1, 1.2, and 2.2.

Male:female sex ratios ranged from 0.9:1 in the General Subdistrict to 1.4:1 in the Fish Creek escapement (Tables 29–33). However, most of the commercial fisheries sampled indicated that 51.8% to 56.1% of the catches were males.

### **Chum Salmon**

Chum salmon harvested in the commercial drift gillnet fishery were primarily 0.3 (57.1%) and 0.4 (40.2%; Table 34). The mean length of age-0.3 chum salmon was 581 mm and age 0.4 was 605 mm. For all

periods combined, the male:female ratio was 0.9:1. The sex ratio gradually changed from 0.8:1 for 25 June to 16 July to 1.1:1 for 3 August to 7 September.

#### LITERATURE CITED

- ADF&G (Alaska Department of Fish and Game). 1990. Cook Inlet and Prince William Sound commercial and finfish regulations salmon and miscellaneous finfish, 1990–1991 edition. Alaska Department of Fish and Game, Commercial Fisheries Division, Juneau.
- Clutter, R., and L. Whitesel. 1956. Collection and interpretation of sockeye salmon scales. Bulletin International Pacific Salmon Fisheries Commission, No. 9, New Westminster, British Columbia.
- Cochran, W. 1977. Sampling techniques, 3rd edition. John Wiley and Sons, Inc., New York.
- Cross, B. 1985. Abundance, age, sex, and size data for Upper Cook Inlet sockeye, chinook, coho, chum, and pink salmon, 1983. Alaska Department of Fish and Game, Division of Commercial Fisheries, Technical Data Report 159, Juneau.
- Cross, B.A., W.E. Goshert, and B.L. Stratton. 1987. Catch, age, sex, and length data for Upper Cook Inlet chinook, coho, and chum salmon 1984–1986. Alaska Department of Fish and Game, Commercial Fisheries Division, Juneau.
- Davis, R.Z., K.E. Tarbox, and B. King. 1984. Age, length, and weight data on chinook salmon, coho salmon, pink salmon, and chum salmon collected in Upper Cook Inlet (1964–1981). Alaska Department of Fish and Game, Commercial Fisheries Division, Upper Cook Inlet Data Report 84-4, Soldotna.
- Davis, R.Z., and K.E. Tarbox. 1985. Age, length, and weight data of sockeye salmon collected in Upper Cook Inlet, 1964–81. Alaska Department of Fish and Game, Division of Commercial Fisheries, Upper Cook Inlet Data Report 85-7, Soldotna.
- Engel, L.J. 1990. Northern Cook Inlet fisheries, a report to the Alaska Board of Fisheries. Alaska Department of Fish and Game, Division of Sport Fish, Soldotna.
- King, B.E., and K.E. Tarbox. 1991. Upper Cook Inlet salmon escapement studies, 1990. Alaska Department of Fish and Game, Division of Commercial Fisheries, Technical Fishery Report 91-21, Juneau.
- Koo, T.S.Y. 1955. Biology of the red salmon, *Oncorhynchus nerka* (Walbaum), of Bristol Bay, Alaska, as revealed by a study of their scales. Doctoral dissertation, University of Washington, Seattle.

#### LITERATURE CITED (Continued)

- Koo, T.S.Y. 1962. Age determination in salmon. Pages 37–48 in T. S. Y. Koo, editor. Studies of Alaska Red Salmon. University of Washington Press, Seattle.
- Mills, M.J. 1991. Harvest, catch, and participation in Alaska sport fisheries during 1990. Alaska Department of Fish and Game, Division of Sport Fish, Fishery Data Series 91-58, Juneau.
- Mosher, K. 1969. Identification of Pacific salmon and steelhead trout by scale characteristics. United States Department of the Interior, Circular 317, Washington, D.C.
- Nelson, D. 1990. The Upper Kenai Peninsula sport and personal use fisheries, a report to the Alaska Board of Fisheries. Alaska Department of Fish and Game, Division of Sport Fish, Soldotna.
- Skvorc, P., and D. Burwen. 1990. Estimation of chinook salmon returns to the Kenai River with sonar, a report to the Alaska Board of Fisheries. Alaska Department of Fish and Game, Division of Sport Fish, Anchorage.
- Thompson, S.K. 1987. Sample size for estimating multinomial proportions. *The American Statistician* 41:42–46.
- Waltemyer, D.L. 1989. Age and size composition of chinook, sockeye, coho, and chum salmon returning to Upper Cook Inlet, Alaska, in 1987. Alaska Department of Fish and Game, Division of Commercial Fisheries, Technical Fishery Report 89-18, Juneau.
- Waltemyer, D.L. 1990. Abundance, age, sex, and size of chinook, sockeye, coho, and chum salmon returning to Upper Cook Inlet, Alaska in 1988. Alaska Department of Fish and Game, Division of Commercial Fisheries, Technical Fishery Report 90-07, Juneau.
- Waltemyer, D.L. 1991. Abundance, age, sex, and size of chinook, sockeye, coho, and chum salmon returning to Upper Cook Inlet, Alaska in 1989. Alaska Department of Fish and Game, Division of Commercial Fisheries, Technical Fishery Report 91-17, Juneau.

Table 1. Commercial salmon catch by area and gear type, Upper Cook Inlet, Alaska, in 1990.<sup>a</sup>

Area/Gear	Chinook	Sockeye	Coho	Pink	Chum	Total
<b>CENTRAL DISTRICT:</b>						
<u>Drift Gill Net</u>	621	2,305,742	247,453	323,955	289,521	3,167,292
<u>Set Gill Net</u>						
Upper Kagamil Island	4,139	1,116,975	40,351	225,429	4,611	1,391,505
Kustatan	101	50,532	32,775	8,609	1,916	93,933
Western	1,082	11,171	11,814	678	386	25,131
Chinitna Bay	574	21,727	23,209	870	8,622	55,002
Subtotal	7	1,554	7,253	164	10,650	19,628
<u>Seine</u>	0	0	0	0	0	0
<b>Subtotal</b>	<b>5,903</b>	<b>1,201,959</b>	<b>115,402</b>	<b>235,750</b>	<b>26,185</b>	<b>1,585,199</b>
<b>NORTHERN DISTRICT:</b>						
<u>Set Gill Net</u>						
Eastern General	2,488	27,012	32,101	8,453	3,877	73,931
Subtotal	7,094	69,386	107,300	35,491	31,833	251,104
<b>Subtotal</b>	<b>9,582</b>	<b>96,398</b>	<b>139,401</b>	<b>43,944</b>	<b>35,710</b>	<b>325,035</b>
<b>Total</b>	<b>16,106</b>	<b>3,604,099</b>	<b>502,256</b>	<b>603,649</b>	<b>351,416</b>	<b>5,077,526</b>

<sup>a</sup> Reprinted by permission. Source: J. Fox, Alaska Department of Fish and Game (ADF&G), Soldotna, personal communication.

Table 2. Salmon harvest estimates from selected subsistence, personal use, and sport fisheries of Upper Cook Inlet, Alaska, in 1990.

Fishery	Species				
	Chinook	Sockeye	Coho	Pink	Chum
<b>Subsistence Catch:</b>					
Tyonek <sup>a</sup>	797	92	366	124	10
<b>Personal Use Catch:</b>					
CENTRAL DISTRICT Kasilof River Dip Net <sup>b</sup> Set Gill Net <sup>c</sup>	129	7,219	No Fishery		
Kenai River Dip Net <sup>b</sup> Kenaitze <sup>b</sup> early run late run	40	19	189		326
	13	3,458	928		
NORTHERN DISTRICT Fish Creek Dip Net <sup>d</sup>		6,500			
CENTRAL and NORTHERN DISTRICT Set Gill Net <sup>c</sup>			2,291	23	7
<b>Subtotal</b>	<b>182</b>	<b>17,196</b>	<b>3,408</b>	<b>349</b>	<b>7</b>
<b>Sport Catch:</b>					
CENTRAL DISTRICT Kenai River <sup>b</sup> early run late run	1,735		30,078		
	6,247	87,580	15,264		
Russian River <sup>b</sup> early run late run		30,215			
		56,175			

- Continued -

Table 2. (p. 2 of 2)

Fishery	Species				
	Chinook	Sockeye	Coho	Pink	Chum
<b>Sport Catch:</b>					
Kasilof River <u>Crooked Creek<sup>e</sup></u>	7,788				
<b>NORTHERN DISTRICT</b>					
Susitna River <u>East Side</u> Willow Creek <sup>d</sup>	7,500-8,000 <sup>f</sup> 3,113 <sup>g</sup>				
<u>West Side</u> Lake Creek <sup>d</sup> Deshka River <sup>d</sup> Alexander Creek <sup>d</sup>	12,000-15,000 3,000 <sup>g</sup> 3,500-5,000 <sup>b</sup> 2,596 <sup>h</sup>				
Little Susitna River <sup>d</sup>	1,800		9,260		
<b>Subtotal</b>	37,070-40,570	173,970	54,602		
<b>Total</b>	38,049-41,549	191,258	58,376	473	17

<sup>a</sup> Source: R. Stanek, Alaska Department of Fish and Game (ADF&G), Anchorage, personal communication.

<sup>b</sup> Source: Nelson (1990).

<sup>c</sup> Source: P. Ruesch, ADF&G, Soldotna, personal communication.

<sup>d</sup> Source: Engel (1990).

<sup>e</sup> Source: G. Kyle, ADF&G, Soldotna, personal communication.

<sup>f</sup> On-site evaluation. The principle tributaries are Willow Creek, Little Willow Creek, Sheep Creek, Montana Creek, and Talkeetna River.

<sup>g</sup> Creel survey. No creel surveys were active for coho salmon.

<sup>h</sup> Index count.

Table 3. Number of spawners estimated or indexed in selected streams and rivers of Upper Cook Inlet, Alaska, in 1990.

Location	Species				
	Chinook	Sockeye	Coho	Pink	Chum
<b>Central District:</b>					
Kenai River					
early run	8,656 <sup>a</sup>				
late run	25,770 <sup>a</sup>	571,940 <sup>bc</sup>			
Russian River					
early run					
above weir		26,716 <sup>d</sup>			
late run					
above weir		83,336 <sup>d</sup>			
below falls		11,760 <sup>d</sup>			
Hidden Creek		77,959 <sup>e</sup>			
Kasilof River					
mainstem		137,305 <sup>bf</sup>			
Crooked Creek <sup>g</sup>	1,405				
Crescent River <sup>b</sup>	21 <sup>h</sup>	52,238	73 <sup>h</sup>		7,896 <sup>h</sup>
Packers Creek <sup>e</sup>		31,868			
Anchor River	2,630 <sup>a</sup>				
Ninilchik River	840 <sup>a</sup>				
Deep Creek	1,310 <sup>a</sup>				
Subtotal	40,632	820,067 <sup>i</sup>	73		7,896

**Northern District:**

Susitna River

Eastside streams

Willow Creek	2,365 <sup>j</sup>
Montana Creek	1,576 <sup>j</sup>
Little Willow Creek	1,115 <sup>j</sup>
Sheep Creek	634 <sup>j</sup>
Clear Creek	2,380 <sup>j</sup>
Prairie Creek	9,113 <sup>j</sup>
Chulitna River	2,681 <sup>j</sup>

-Continued-

Table 3. (p. 2 of 2)

Location	Species				
	Chinook	Sockeye	Coho	Pink	Chum
<b>Northern District: (continued)</b>					
<b>Susitna River</b>					
<b><u>Westside streams</u></b>					
Alexander Creek	2,596 <sup>j</sup>				
Deshka River	18,166 <sup>j</sup>				
Yentna River <sup>b</sup>	607 <sup>h</sup>	140,290	21,346 <sup>h</sup>	244,569 <sup>h</sup>	33,566 <sup>h</sup>
Lake Creek	2,075 <sup>j</sup>				
Chelatna Lake <sup>e</sup>		5,283			
Hewitt Lake <sup>e</sup>		12,943			
Talachulitna River	2,694 <sup>j</sup>				
Little Susitna River <sup>j</sup>	922 <sup>k</sup>		14,212 <sup>l</sup>		
Fish Creek <sup>m</sup>	2	48,717	2,673		
<b>Subtotal</b>	<b>46,319<sup>n</sup></b>	<b>189,007<sup>o</sup></b>	<b>38,231</b>	<b>244,569</b>	<b>33,566</b>
<b>Total</b>	<b>86,951</b>	<b>1,009,074</b>	<b>38,304</b>	<b>244,569</b>	<b>41,462</b>

<sup>a</sup> Source: Nelson (1990).<sup>b</sup> Source: B. King, Alaska Department of Fish and Game (ADF&G), Soldotna, personal communication.<sup>c</sup> Sonar count less sport harvest above sonar site.<sup>d</sup> Source: J. Carlon, ADF&G, Soldotna, personal communication.<sup>e</sup> Source: M. Schollenberger, Cook Inlet Aquaculture Association (CIAA), Soldotna, personal communication.<sup>f</sup> Sonar count less egg take of 6,831 fish.<sup>g</sup> Source: G. Kyle, ADF&G, Soldotna, personal communication. (655 were passed above weir, 750 were counted below weir).<sup>h</sup> Index count only.<sup>i</sup> Subtotal excludes Russian River late run and Hidden Creek estimates of spawners which are components of the Kenai River late run estimate.<sup>j</sup> Source: Engel (1990).<sup>k</sup> Partial count.<sup>l</sup> Weir count less sport harvest.<sup>m</sup> Source: R. Chlupach, ADF&G, Big Lake, personal communication.<sup>n</sup> Subtotal excludes Yentna River index count.<sup>o</sup> Subtotal excludes Chelatna Lake and Hewitt Lake spawner estimates which are components of the Yentna River estimate.

Table 4. Number of salmon sampled from commercial catches and escapements in Upper Cook Inlet, Alaska, in 1990.

Location <sup>a</sup>	Species			
	Chinook	Sockeye	Coho	Chum
<b>Commercial Catch:</b>				
<b><u>Central District</u></b>				
Drift		8,143	2,001	2,234
Upper Subdistrict	582 <sup>b</sup>		1,327 <sup>b</sup>	
Salamatof Beach		2,400		
Kalifonsky Beach		1,600		
Cohoe/Ninilchik Beach		2,968		
Western Subdistrict		813	530	
<b><u>Northern District</u></b>				
Eastern Subdistrict	395	1,575		
General Subdistrict	416	1,200	800	
Subtotal	1,393	18,699	4,658	2,234
<b>Escapement:</b>				
<b><u>Central District</u></b>				
Kenai River				
Mainstem late run		1,960		
Hidden Creek		850 <sup>c</sup>		
Kasilof River				
Mainstem		874		
Crescent River		785		
Packers Creek		1,037 <sup>c</sup>		
<b><u>Northern District</u></b>				
Susitna River				
Mainstem (Sunshine Station)		1,333		
Yentna River		2,408		
Hewitt Lake		421 <sup>c</sup>		
Chelatna Lake (Lake Creek)		167 <sup>c</sup>		
Fish Creek		555 <sup>d</sup>	440 <sup>d</sup>	
Subtotal		10,390	440	
Total	1,393	29,089	5,098	2,234

- Continued -

Table 4. (p. 2 of 2)

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- <sup>a</sup> Specific locations not footnoted were sampled by Commercial Fisheries Division personnel, Alaska Department of Fish and Game (ADF&G).
  - <sup>b</sup> Represents pooled samples from the Upper Subdistrict commercial set gill net fisheries.
  - <sup>c</sup> Samples collected by Cook Inlet Aquaculture Association (CIAA) personnel.
  - <sup>d</sup> Samples collected by Fisheries Rehabilitation, Enhancement and Development (FRED) Division personnel, ADF&G.

Table 5. Age and length composition of chinook salmon harvested in selected commercial set gill net fisheries of Upper Cook Inlet, Alaska, in 1990.

Fishery	Age Group											
	1.1	0.3	1.2	2.1	0.4	1.3	2.2	1.4	2.3	1.5	2.4	Total
<b>CENTRAL DISTRICT:</b>												
<b>Upper Subdistrict</b>												
Number	48	10	1,203	39	10	1,213	19	1,375	20	135	67	4,139
Percent	1.16	.24	29.06	.94	.24	29.31	.46	33.22	.48	3.26	1.62	100.00
Sample Size	5	1	125	4	1	126	2	143	2	14	7	430
Mean Length (mm)	560	720	609	545	890	772	650	979	845	969	986	799
Sample Size	5	1	125	4	1	126	2	142	2	14	7	429
<b>NORTHERN DISTRICT:</b>												
<b>Eastern Subdistrict</b>												
Number			395			989	7	989	65	29	14	2,488
Percent			15.88			39.75	.28	39.75	2.61	1.17	.56	100.00
Sample Size			55			138	1	138	9	4	2	347
Mean Length (mm)			556			763	482	914	681	1,021	843	790
Sample Size			55			138	1	138	9	4	2	347
<b>General Subdistrict</b>												
Number	99		1,477			2,956		2,463		99		7,094
Percent	1.40		20.82			41.67		34.72		1.40		100.00
Sample Size	5		75			150		125		5		360
Mean Length (mm)	460		593			807		935		940		804
Sample Size	5		75			150		125		5		360
<b>Total</b>												
Number	147	10	3,075	39	10	5,158	26	4,827	85	263	81	13,721
Percent	1.07	.07	22.41	.28	.07	37.59	.19	35.18	.62	1.92	.59	100.00
Std. Error	14.93	24.10	8.00	23.33	24.10	6.87	14.23		6.71	17.86		10.19
Sample Size	10	1	255	4	1	414	3	406	11	23	9	1,137
Mean Length (mm)	493	720	594	545	890	790	605	943	720	963	961	800
Sample Size	10	1	255	4	1	414	3	405	11	23	9	1,136

Table 6. Age, sex and length composition of chinook salmon harvested in the Upper Subdistrict commercial set gill net fishery, Upper Cook Inlet, Alaska, in 1990.

	Age Group												
	1.1	0.3	1.2	2.1	0.4	1.3	2.2	1.4	2.3	1.5	2.4	Total	
Sample period:	2 July - 15 August												
Males	48		732	39	10	847	19	990	10	77	48	2,820	
Percent	1.16		17.69	0.94	0.24	20.46	0.46	23.92	0.24	1.86	1.16	68.13	
Std. Error	0.23		0.09	0.23	0.23	0.11	0.23	0.12	0.06	0.08	0.12		
Mean Length (mm)	560		599	545	890	775	650	988	790	976	992	806	
Std. Error	59.58		13.93	45.19		20.59	10.00	8.37		25.98	39.29	7.90	
Sample Size	5		76	4	1	88	2	103	1	8	5	293	
Females		10	471			366		385	10	58	19	1,319	
Percent		0.24	11.38			8.84		9.30	0.24	1.40	0.46	31.87	
Std. Error		0.23	0.04			0.02		0.02	0.06	0.04	0.02		
Mean Length (mm)		720	624			767		955	900	958	970	783	
Std. Error			12.13			20.41		10.57		34.00	30.00	7.92	
Sample Size		1	49			38		39	1	6	2	136	
Both Sexes	48	10	1,203	39	10	1,213	19	1,375	20	135	67	4,139	
Percent	1.16	0.24	29.06	0.94	0.24	29.31	0.46	33.22	0.48	3.26	1.62	100.00	
Std. Error	0.23	0.23	0.12	0.23	0.23	0.13	0.23	0.14	0.12	0.12	0.14		
Mean Length (mm)	560	720	609	545	890	772	650	979	845	969	986	799	
Std. Error	59.58		9.72	45.19		15.64	10.00	6.72		20.81	29.41	5.94	
Sample Size	5		1	125	4	1	126	2	142	2	14	7	429

Table 7. Age, sex and length composition of chinook salmon harvested in the Eastern Subdistrict commercial set gill net fishery, Upper Cook Inlet, Alaska, in 1990.

	Age Group							
	1.2	1.3	2.2	1.4	2.3	1.5	2.4	Total
Sample period:	4 June - 24 August							
Males	237	451		373	29	29		1,119
Percent	9.53	18.13		14.99	1.17	1.17		44.98
Std. Error	0.10	0.06		0.04	0.06	0.29		
Mean Length (mm)	543	765		951	673	1,021		784
Std. Error	8.60	10.80		8.79	42.89	46.59		5.79
Sample Size	33	63		52	4	4		156
Females	158	538	7	616	36		14	1,369
Percent	6.35	21.62	0.28	24.76	1.45		0.56	55.02
Std. Error	0.05	0.09	0.29	0.11	0.09		0.29	
Mean Length (mm)	576	761	482	891	688		843	795
Std. Error	14.27	8.32		6.16	69.61		52.50	4.97
Sample Size	22	75	1	86	5		2	191
Both Sexes	395	989	7	989	65	29	14	2,488
Percent	15.88	39.75	0.28	39.75	2.61	1.17	0.56	100.00
Std. Error	0.15	0.14	0.29	0.15	0.15	0.29	0.29	
Mean Length (mm)	556	763	482	914	681	1,021	843	790
Std. Error	7.70	6.69		5.07	43.04	46.59	52.50	3.78
Sample Size	55	138	1	138	9	4	2	347

Table 8. Age, sex and length composition of chinook salmon harvested in the General Subdistrict commercial set gill net fishery, Upper Cook Inlet, Alaska, in 1990.

	Age Group					
	1.1	1.2	1.3	1.4	1.5	Total
Sample period:	4 June - 20 August					
Males	79	1,142	1,084	1,005	20	3,330
Percent	1.11	16.10	15.28	14.17	0.28	46.94
Std. Error	0.18	0.17	0.04	0.05	0.01	
Mean Length (mm)	455	584	794	973	970	769
Std. Error	36.12	6.59	10.25	8.42		4.84
Sample Size	4	58	55	51	1	169
Females	20	335	1,872	1,458	79	3,764
Percent	0.28	4.72	26.39	20.55	1.11	53.06
Std. Error	0.01	0.01	0.11	0.10	0.18	
Mean Length (mm)	480	620	814	908	932	834
Std. Error		13.16	5.19	5.32	42.25	3.61
Sample Size	1	17	95	74	4	191
Both Sexes	99	1,477	2,956	2,463	99	7,094
Percent	1.40	20.82	41.67	34.72	1.40	100.00
Std. Error	0.19	0.18	0.15	0.14	0.19	
Mean Length (mm)	460	593	807	935	940	804
Std. Error	36.12	5.91	4.99	4.66	42.25	2.97
Sample Size	5	75	150	125	5	360

Table 9. Age composition of sockeye salmon in selected commercial gill net fisheries and escapements with overall exploitation rates by age, Upper Cook Inlet, Alaska, in 1990.

Fishery	Age Group															Total	
	0.2	1.1	0.3	1.2	2.1	0.4	1.3	2.2	3.1	1.4	2.3	3.2	2.4	3.3	3.4		
<b>COMMERCIAL FISHERY</b>																	
<b>CENTRAL DISTRICT:</b>																	
<u>Drift</u>																	
Number	4,772		37,213	206,173		.18	1,059	1,264,414	160,230		10,209	612,780	2,664	5,072	1,103	2,305,707	
Percent	.21		1.61	8.94		.00	.05	54.84	6.95		.44	26.58	.12	.22	.05	100.00	
Sample Size	6		62	618		1	1	3,938	563		37	2,041	10	17	7	7,301	
<u>Upper Subdistrict</u>																	
Cohoe/Ninilchik Beach																	
Number		117	316	30,610			73,243	38,533		598	55,058	155	22			198,652	
Percent		.06	.16	15.41			36.87	19.40		.30	27.72	.08	.01			100.00	
Sample Size		1	3	466			940	533		7	682	1	2			2,635	
Kalifonsky Beach																	
Number		417	37,379				228,511	34,139		2,685	119,262	749	1,880	374		425,396	
Percent		.10	8.79				53.72	8.03		.63	28.04	.18	.44	.09		100.00	
Sample Size		2	231				932	225		9	552	2	6	1		1,960	
Salamatof Beach																	
Number	195	1,522	47,159		391		236,060	44,396		4,252	154,446	1,636	2,675		195	492,927	
Percent	.04	.31	9.57		.08		47.89	9.01		.86	31.33	.33	.54		.04	100.00	
Sample Size	1	3	211		2		1,053	203		16	573	5	11		1	2,079	
<u>Western Subdistrict</u>																	
Number			772				8,710	1,735		96	10,318		64	32		21,727	
Percent			3.55				40.09	7.99		.44	47.49		.29	.15		100.00	
Sample Size			24				271	54		3	321		2	1		676	
<b>NORTHERN DISTRICT:</b>																	
<b>Eastern Subdistrict</b>																	
Number	58	151	202	6,296		.53		12,011	3,858		.25	4,029	177		152	27,012	
Percent	.21	.56	.75	23.31		.20		44.47	14.28		.09	14.92	.66		.56	100.00	
Sample Size	4	9	11	322		3		591	173		1	178	7		6	1,305	
<u>General Subdistrict</u>																	
Number	101		793	10,539			44,939	4,733		227	7,911		143			69,386	
Percent	.15		1.14	15.19			64.77	6.82		.33	11.40		.21			100.00	
Sample Size	1		9	128			620	59		4	133		2			956	

-Continued-

Table 9. (p. 2 of 3)

Fishery	Age Group															Total	
	0.2	1.1	0.3	1.2	2.1	0.4	1.3	2.2	3.1	1.4	2.3	3.2	2.4	3.3	3.4		
<b>ESCAPEMENT</b>																	
CENTRAL DISTRICT:																	
Kenai River																	
Number	3,917	1,775	142,215	2,014			273,213	90,083		3,932	139,186	1,538	1,648			659,521	
Percent	.59	.27	21.56	.31			41.43	13.66		.60	21.10	.23	.25			100.00	
Sample Size	8	4	295	4			676	201		10	309	3	3			1,513	
Hidden Creek																	
Number		67,354	109				1,202	9,185			109					77,959	
Percent		86.40	.14				1.54	11.78			.14					100.00	
Sample Size		616	1				11	84			1					713	
Kasilof River																	
Number	574	83	47,423				29,767	47,817		370	17,815	287				144,136	
Percent	.40	.06	32.90				20.65	33.17		.26	12.36	.20				100.00	
Sample Size	2	1	230				187	215		2	124	1				762	
Crescent River																	
Number	176	2,122	88				26,873	1,767		176	20,948	88				52,238	
Percent	.34	4.06	.17				51.44	3.38		.34	40.10	.17				100.00	
Sample Size	2	24	1				304	20		2	237	1				591	
Packers Creek																	
Number	137		4,243	366			8,039	16,658		2,333		46	46			31,868	
Percent	.43		13.31	1.15			25.23	52.27		7.32		.14	.14			100.00	
Sample Size	3		100	8			237	378		67		1	1			795	

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Table 9. (p. 3 of 3)

Fishery	Age Group														Total
	0.2	1.1	0.3	1.2	2.1	0.4	1.3	2.2	3.1	1.4	2.3	3.2	2.4	3.3	3.4
<b>NORTHERN DISTRICT:</b>															
Fish Creek															
Number	341		18,169		341		14,990	11,923	114		2,839				48,717
Percent	.70		37.29		.70		30.77	24.47	.23		5.83				100.00
Sample Size	3		160		3		132	105	1		25				429
Yentna River															
Number	1,072	416	3,374	41,947	117		66,767	13,719		1,007	11,517	254	100		140,290
Percent	.76	.30	2.41	29.90	.08		47.59	9.78		.72	8.21	.18	.07		100.00
Sample Size	15	5	50	543	2		926	191		11	169	3	1		1,916
Chelatna Lake															
Number	170		171	965			3,920	57							5,283
Percent	3.22		3.24	18.27			74.20	1.08							100.00
Sample Size	3		3	17			69	1							93
Hewitt Creek															
Number			943				8,981	1,359		453	1,207				12,943
Percent			7.29				69.39	10.50		3.50	9.33				100.00
Sample Size			25				238	36		12	32				343
Susitna River <sup>a</sup>															
Percent	.10	.20	.80	35.30			49.45	6.95		.25	6.85	.10			100.00
Sample Size	1	2	8	391			537	76		3	74	1			1,093
<b>Upper Cook Inlet Total</b>															
Number	6,175	5,852	46,058	665,015	3,497	1,059	2,302,629	480,331	114	24,035	1,159,895	7,462	11,738	1,707	195 4,715,762
Percent	.13	.12	.98	14.10	.07	.02	48.83	10.19	.00	.51	24.60	.16	.25	.04	.00 100.00
Std. Error	2.29	3.62	1.72	.52	2.98	4.59	.30	.54	23.35	.66	.46	.93	.85	.80	3.95
Sample Size	30	34	158	4,401	25	1	11,662	3,117	1	117	5,518	33	46	16	1 25,160
Exploitation Rate <sup>b</sup>	.697	.080	.822	.532	.803	-	.847	.595	-	.736	.824	.698	.833	-	.744

<sup>a</sup> No assessment of escapement.<sup>b</sup> Exploitation rate equals commercial catch divided by total return. In this case, total return equals commercial catch plus the sum of the Kenai, Kasilof, Crescent, and Yentna Rivers and Packers and Fish Creeks escapements. An estimate of total Susitna River escapement was made based on the assumption that Yentna River escapement accounts for half of the production.

Table 10. Age, sex and length composition of sockeye salmon harvested in the Central District drift gill net fishery, Upper Cook Inlet, Alaska, in 1990.

	Age Group												
	0.2	0.3	1.2	2.1	0.4	1.3	2.2	1.4	2.3	3.2	2.4	3.3	Total
<b>Sample Period 1: 25 June</b>													
MALES	18	520	18		1,544	556	108	538					3,302
Percent	0.30	8.78	0.30		26.07	9.39	1.82	9.08					55.76
Std. Error	0.08	0.17	0.30		0.08	0.17	0.17	0.06					
Mean Length(mm)	529	494	541		554	503	602	555					537
Std. Error		5.21			3.53	5.06	13.13	5.61					2.27
Sample Size	1	29	1		86	31	6	30					184
FEMALES	18	179			1,508	197	36	682					2,620
Percent	0.30	3.02			25.46	3.33	0.61	11.52					44.24
Std. Error	0.08	0.02			0.07	0.02	0.02	0.09					
Mean Length(mm)	555	499			555	499	542	566					549
Std. Error		8.90			2.47	7.59	3.00	4.35					2.00
Sample Size	1	10			84	11	2	38					146
BOTH SEXES	36	699	18		3,052	753	144	1,220					5,922
Percent	0.61	11.80	0.30		51.54	12.72	2.43	20.60					100.00
Std. Error	0.15	0.19	0.30		0.15	0.19	0.19	0.15					
Mean Length(mm)	542	495	541		554	502	587	561					543
Std. Error		4.50			2.16	4.23	9.88	3.47					1.54
Sample Size	2	39	1		170	42	8	68					330
<b>Sample Period 2: 29 June</b>													
MALES		1,014			5,238	648	28	1,746					8,730
Percent		6.48			33.45	4.14	0.18	11.15					55.75
Std. Error		0.10			0.05	0.11	0.18	0.04					
Mean Length(mm)		499			563	499	488	545					547
Std. Error		6.93			2.19	6.67		3.42					1.76
Sample Size		36			186	23	1	62					310
FEMALES		338			4,591	197		1,746					6,928
Percent		2.16			29.32	1.26		11.15					44.25
Std. Error		0.01			0.04	0.01		0.04					
Mean Length(mm)		504			558	506		557					554
Std. Error		7.40			1.81	7.44		3.28					1.52
Sample Size		12			163	7		62					246
BOTH SEXES		1,352			9,829	845	28	3,492					15,658
Percent		8.63			62.77	5.40	0.18	22.30					100.00
Std. Error		0.11			0.09	0.12	0.18	0.09					
Mean Length(mm)		500			561	501	488	551					550
Std. Error		5.51			1.44	5.40		2.37					1.19
Sample Size		48			349	30	1	124					556

-Continued-

Table 10. (p. 2 of 8)

	Age Group												
	0.2	0.3	1.2	2.1	0.4	1.3	2.2	1.4	2.3	3.2	2.4	3.3	Total
<b>Sample Period 3: 2 July</b>													
MALES		1,250			6,847	800			3,199				12,096
Percent		4.58			25.09	2.93			11.72				44.32
Std. Error		0.06			0.04	0.04			0.03				
Mean Length(mm)		503			564	510			557				552
Std. Error		7.69			3.48	12.58			3.97				2.51
Sample Size		25			137	16			64				242
FEMALES		50	900		8,746	900	100	4,499					15,195
Percent		0.18	3.30		32.05	3.30	0.37	16.49					55.68
Std. Error		0.18	0.03		0.06	0.05	0.18	0.06					
Mean Length(mm)		515	496		559	496	581	556					551
Std. Error		5.70			1.70	7.71	1.00	2.78					1.40
Sample Size		1	18		175	18	2	90					304
BOTH SEXES		50	2,150		15,593	1,700	100	7,698					27,291
Percent		0.18	7.88		57.14	6.23	0.37	28.21					100.00
Std. Error		0.18	0.09		0.09	0.09	0.18	0.09					
Mean Length(mm)		515	500		561	503	581	556					551
Std. Error		5.07			1.80	7.19	1.00	2.32					1.36
Sample Size		1	43		312	34	2	154					546
<b>Sample Period 4: 6 July</b>													
MALES		4,956			25,229	2,553	451	5,256					38,445
Percent		6.11			31.11	3.15	0.56	6.48					47.41
Std. Error		0.09			0.04	0.06	0.05	0.03					
Mean Length(mm)		503			574	506	641	571					561
Std. Error		6.52			2.54	7.26	2.08	7.25					2.17
Sample Size		33			168	17	3	35					256
FEMALES		150	2,102		30,787	1,952	451	7,208					42,650
Percent		0.18	2.59		37.96	2.41	0.56	8.89					52.59
Std. Error		0.19	0.02		0.06	0.03	0.05	0.06					
Mean Length(mm)		574	509		562	523	595	568					559
Std. Error		9.71			1.64	11.65	13.61	4.74					1.60
Sample Size		1	14		205	13	3	48					284
BOTH SEXES		150	7,058		56,016	4,505	902	12,464					81,095
Percent		0.18	8.70		69.07	5.56	1.11	15.37					100.00
Std. Error		0.19	0.11		0.09	0.09	0.09	0.09					
Mean Length(mm)		574	505		568	513	618	569					560
Std. Error		5.41			1.45	6.51	6.89	4.11					1.33
Sample Size		1	47		373	30	6	83					540

-Continued-

Table 10. (p. 3 of 8)

	Age Group												
	0.2	0.3	1.2	2.1	0.4	1.3	2.2	1.4	2.3	3.2	2.4	3.3	Total
<b>Sample Period 5: 9 July</b>													
MALES	317	634	11,094			44,692	7,924	634	15,214				80,509
Percent	0.19	0.38	6.63			26.70	4.73	0.38	9.09				48.11
Std. Error	0.19	0.03	0.09			0.04	0.07	0.05	0.04				
Mean Length(mm)	462	574	501			577	492	587	574				557
Std. Error		10.00	5.74			2.92	7.65	39.50	4.22				2.13
Sample Size	1	2	35			141	25	2	48				254
FEMALES		951	5,071			57,372	5,071	634	17,750				86,849
Percent		0.57	3.03			34.28	3.03	0.38	10.61				51.89
Std. Error		0.07	0.02			0.06	0.03	0.05	0.05				
Mean Length(mm)		574	506			563	515	582	561				557
Std. Error		7.88	10.88			1.86	12.13	3.00	3.60				1.72
Sample Size		3	16			181	16	2	56				274
BOTH SEXES	317	1,585	16,165			102,064	12,995	1,268	32,964				167,358
Percent	0.19	0.95	9.66			60.99	7.76	0.76	19.70				100.00
Std. Error	0.19	0.10	0.11			0.10	0.10	0.09	0.10				
Mean Length(mm)	462	574	503			569	501	584	567				557
Std. Error		6.19	5.21			1.65	6.64	19.81	2.75				1.36
Sample Size	1	5	51			322	41	4	104				528
<b>Sample Period 6: 16 July</b>													
MALES		46,577			1,059	146,084	23,289	2,117	53,987				274,172
Percent		7.97			0.18	25.00	3.99	0.36	9.24				46.92
Std. Error		0.11			0.18	0.03	0.06	0.08	0.04				
Mean Length(mm)		506			648	582	496	623	585				563
Std. Error		6.80				3.14	7.20	34.50	5.04				2.36
Sample Size		44			1	138	22	2	51				259
FEMALES	7,410	13,762				207,480	17,996	1,059	62,456				310,163
Percent	1.27	2.36				35.51	3.08	0.18	10.69				53.08
Std. Error	0.18	0.01				0.06	0.03	0.02	0.05				
Mean Length(mm)		557	508			570	520	634	573				565
Std. Error		6.93	11.15			1.81	8.73		3.52				1.58
Sample Size		7	13			196	17	1	59				293
BOTH SEXES	7,410	60,339			1,059	353,564	41,285	3,176	116,443				584,335
Percent	1.27	10.33			0.18	60.51	7.07	0.54	19.93				100.00
Std. Error	0.18	0.12			0.18	0.09	0.09	0.10	0.09				
Mean Length(mm)		557	507			648	575	506	626	579			564
Std. Error		6.93	5.83				1.68	5.57	34.50	3.01			1.39
Sample Size		7	57			1	334	39	3	110			552

- Continued -

Table 10. (p. 4 of 8)

	Age Group												
	0.2	0.3	1.2	2.1	0.4	1.3	2.2	1.4	2.3	3.2	2.4	3.3	Total
<b>Sample Period 7: 18 July</b>													
MALES	65	3,137				6,536	3,725			4,509			17,972
Percent	0.19	9.13				19.01	10.84			13.12			52.28
Std. Error	0.05	0.17				0.03	0.12			0.04			
Mean Length(mm)	598	484				575	472			576			538
Std. Error		5.87				3.69	5.09			5.32			2.40
Sample Size	1	48				100	57			69			275
FEMALES	65	196				10,130	980			4,967			16,403
Percent	0.19	0.57				29.47	2.85			14.45			47.72
Std. Error	0.05	0.00				0.07	0.01			0.05			
Mean Length(mm)	558	481				565	511			566			561
Std. Error		30.05				2.08	8.24			3.36			1.75
Sample Size	1	3				155	15			76			251
BOTH SEXES	130	3,333				16,666	4,705			9,476			34,375
Percent	0.38	9.70				48.48	13.69			27.57			100.00
Std. Error	0.10	0.17				0.10	0.13			0.10			
Mean Length(mm)	578	484				569	480			571			549
Std. Error		5.80				1.92	4.38			3.08			1.51
Sample Size	2	51				255	72			145			526
<b>Sample Period 8: 20 - 21 July</b>													
MALES	2,369	9,478	37,910			143,350	26,063			73,451			292,621
Percent	0.38	1.51	6.05			22.87	4.16			11.72			46.69
Std. Error	0.08	0.04	0.07			0.04	0.09			0.04			
Mean Length(mm)	504	582	497			582	496			594			566
Std. Error	24.00	12.73	5.72			3.06	7.31			3.09			2.01
Sample Size	2	8	32			121	22			62			247
FEMALES	1,185	11,847	23,694			188,367	11,847	1,185	93,591	1,185	1,185		334,086
Percent	0.19	1.89	3.78			30.06	1.89	0.19	14.93	0.19	0.19		53.31
Std. Error	0.02	0.06	0.03			0.06	0.02	0.19	0.06	0.19	0.19		
Mean Length(mm)	565	566	508			567	521	562	570	522	582		562
Std. Error		4.30	8.90			1.67	14.47		3.05				1.52
Sample Size	1	10	20			158	10	1	79	1	1		281
BOTH SEXES	3,554	21,325	61,604			331,717	37,910	1,185	167,042	1,185	1,185		626,707
Percent	0.57	3.40	9.83			52.93	6.05	0.19	26.65	0.19	0.19		100.00
Std. Error	0.11	0.10	0.10			0.10	0.11	0.19	0.10	0.19	0.19		
Mean Length(mm)	524	573	501			574	504	562	581	522	582		564
Std. Error	24.00	6.14	4.91			1.62	6.76		2.18				1.24
Sample Size	3	18	52			279	32	1	141	1	1		528

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Table 10. (p. 7 of 8)

	Age Group													
	0.2	0.3	1.2	2.1	0.4	1.3	2.2	1.4	2.3	3.2	2.4	3.3	Total	
<b>Sample Period 13: 30 July</b>														
MALES	533	3,999				33,591	5,065	267	15,729	267				59,451
Percent	0.39	2.89				24.28	3.66	0.19	11.37	0.19				42.97
Std. Error	0.05	0.02				0.04	0.04	0.02	0.03	0.19				
Mean Length(mm)	625	516				575	571	626	572	577				571
Std. Error	10.50	16.91				3.84	10.93		7.17					3.24
Sample Size	2	15				126	19	1	59	1				223
FEMALES	533	7,998				39,989	6,132	533	23,727					78,912
Percent	0.39	5.78				28.90	4.43	0.39	17.15					57.03
Std. Error	0.05	0.09				0.06	0.06	0.09	0.07					
Mean Length(mm)	544	534				556	545	565	562					555
Std. Error	5.50	5.61				2.58	7.33	20.50	3.62					1.89
Sample Size	2	30				150	23	2	89					296
BOTH SEXES	1,066	11,997				73,580	11,197	800	39,456	267				138,363
Percent	0.77	8.67				53.18	8.09	0.58	28.52	0.19				100.00
Std. Error	0.10	0.11				0.10	0.10	0.11	0.10	0.19				
Mean Length(mm)	584	528				565	557	585	566	577				562
Std. Error	5.93	6.77				2.25	6.37	20.50	3.59					1.76
Sample Size	4	45				276	42	3	148	1				519
<b>Sample Period 14: 31 July - 7 September</b>														
MALES	130	3,638				12,991	2,598	130	8,315					27,802
Percent	0.18	5.08				18.15	3.63	0.18	11.62					38.84
Std. Error	0.01	0.04				0.03	0.03	0.01	0.02					
Mean Length(mm)	491	504				585	496	530	580					564
Std. Error		7.19				2.90	10.00		4.35					2.30
Sample Size	1	28				100	20	1	64					214
FEMALES	520	3,768				20,786	3,378	390	14,810	130				43,782
Percent	0.73	5.26				29.04	4.72	0.54	20.69	0.18				61.16
Std. Error	0.12	0.05				0.07	0.06	0.10	0.07	0.18				
Mean Length(mm)	549	498				560	514	597	573	560				556
Std. Error	9.29	7.03				2.05	5.52	12.55	2.35					1.47
Sample Size	4	29				160	26	3	114	1				337
BOTH SEXES	650	7,406				33,777	5,976	520	23,125	130				71,584
Percent	0.91	10.35				47.19	8.35	0.73	32.30	0.18				100.00
Std. Error	0.12	0.09				0.10	0.09	0.11	0.10	0.18				
Mean Length(mm)	538	501				570	506	580	575	560				559
Std. Error	9.29	5.03				1.69	5.35	12.55	2.17					1.27
Sample Size	5	57				260	46	4	178	1				551

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Table 10. (p. 6 of 8)

	Age Group													
	0.2	0.3	1.2	2.1	0.4	1.3	2.2	1.4	2.3	3.2	2.4	3.3	Total	
<b>Sample Period 11: 27 July</b>														
MALES	901	1,802	10,814			40,554	4,956	901	28,387	451	451			89,217
Percent	0.38	0.76	4.59			17.21	2.10	0.38	12.05	0.19	0.19			37.86
Std. Error	0.19	0.05	0.07			0.02	0.02	0.08	0.03	0.19	0.02			
Mean Length(mm)	468	598	501			584	516	614	589	551	619			571
Std. Error	47.00	6.41	8.41			3.30	11.28	3.50	3.98					2.35
Sample Size	2	4	24			90	11	2	63	1	1			198
FEMALES		1,802	6,759			77,952	9,913	451	48,213			901	451	146,442
Percent		0.76	2.87			33.08	4.21	0.19	20.46			0.38	0.19	62.14
Std. Error		0.05	0.03			0.08	0.08	0.02	0.08			0.08	0.19	
Mean Length(mm)		563	501			564	516	627	575			590	591	562
Std. Error		6.55	5.32			1.92	6.98		2.28			24.00		1.39
Sample Size		4	15			173	22	1	107			2	1	325
BOTH SEXES	901	3,604	17,573			118,506	14,869	1,352	76,600	451	1,352	451	451	235,659
Percent	0.38	1.53	7.46			50.29	6.31	0.57	32.50	0.19	0.57	0.19	0.19	100.00
Std. Error	0.19	0.10	0.10			0.10	0.11	0.11	0.10	0.19	0.11	0.19	0.19	
Mean Length(mm)	468	581	501			571	516	618	580	551	600	591	591	565
Std. Error	47.00	4.58	5.57			1.69	5.98	3.50	2.06			24.00		1.24
Sample Size	2	8	39			263	33	3	170	1	3	1	1	523
<b>Sample Period 12: 29 July</b>														
MALES		210	1,996			10,507	736		7,566					21,015
Percent		0.38	3.64			19.16	1.34		13.79					38.31
Std. Error		0.01	0.05			0.03	0.02		0.03					
Mean Length(mm)		582	490			587	534		591					577
Std. Error		3.00	10.07			2.82	18.13		3.55					2.22
Sample Size		2	19			100	7		72					200
FEMALES		630	2,102			17,864	1,891		11,348					33,835
Percent		1.15	3.83			32.57	3.45		20.69					61.69
Std. Error		0.11	0.05			0.08	0.10		0.07					
Mean Length(mm)		573	491			563	520		573					559
Std. Error		9.07	7.94			1.96	8.72		2.48					1.51
Sample Size		6	20			170	18		108					322
BOTH SEXES		840	4,098			28,371	2,627		18,914					54,850
Percent		1.53	7.47			51.72	4.79		34.48					100.00
Std. Error		0.12	0.10			0.10	0.11		0.10					
Mean Length(mm)		575	491			572	524		580					566
Std. Error		6.84	6.37			1.62	8.07		2.06					1.26
Sample Size		8	39			270	25		180					522

-Continued-

Table 10. (p. 5 of 8)

	Age Group												
	0.2	0.3	1.2	2.1	0.4	1.3	2.2	1.4	2.3	3.2	2.4	3.3	Total
<b>Sample Period 9: 22 - 23 July</b>													
MALES		7,331			38,122	6,964	367	35,189		733			88,706
Percent		3.55			18.47	3.37	0.18	17.05		0.36			42.98
Std. Error		0.10			0.03	0.04	0.04	0.03		0.18			
Mean Length(mm)		508			591	505	612	589		588			577
Std. Error		6.78			2.67	10.30		3.59		7.50			2.08
Sample Size		20			104	19	1	96		2			242
FEMALES	367	2,566			61,579	7,698	367	45,086					117,663
Percent	0.18	1.24			29.84	3.73	0.18	21.85					57.02
Std. Error	0.18	0.01			0.07	0.05	0.04	0.06					
Mean Length(mm)	564	507			572	524	635	576					569
Std. Error		8.68			1.80	6.28		2.25					1.36
Sample Size	1	7			168	21	1	123					321
BOTH SEXES	367	9,897			99,701	14,662	734	80,275		733			206,369
Percent	0.18	4.80			48.31	7.10	0.36	38.90		0.36			100.00
Std. Error	0.18	0.11			0.09	0.09	0.09	0.09		0.18			
Mean Length(mm)	564	508			579	515	624	582		588			572
Std. Error		5.51			1.51	5.90		2.02		7.50			1.18
Sample Size	1	27			272	40	2	219		2			563
<b>Sample Period 10: 25 - 26 July</b>													
MALES		1,523			9,792	4,134		10,446	326	218	326		26,765
Percent		2.71			17.44	7.36		18.61	0.58	0.39	0.58		47.67
Std. Error		0.07			0.04	0.09		0.04	0.04	0.05	0.05		
Mean Length(mm)		461			585	513		592	520	614	561		569
Std. Error		9.78			3.81	6.39		2.95	18.76	8.50	8.15		2.15
Sample Size		14			90	38		96	3	2	3		246
FEMALES		979			12,186	2,067		13,165	435	218	326		29,376
Percent		1.74			21.71	3.68		23.45	0.77	0.39	0.58		52.33
Std. Error		0.03			0.06	0.02		0.06	0.06	0.05	0.05		
Mean Length(mm)		499			570	512		573	525	569	560		564
Std. Error		4.12			2.41	4.93		2.29	9.28	4.50	15.35		1.50
Sample Size		9			112	19		121	4	2	3		270
BOTH SEXES		2,502			21,978	6,201		23,611	761	436	652		56,141
Percent		4.46			39.15	11.05		42.06	1.36	0.78	1.16		100.00
Std. Error		0.10			0.10	0.11		0.10	0.10	0.10	0.10		
Mean Length(mm)		476			577	513		581	523	591	560		566
Std. Error		6.17			2.16	4.57		1.82	9.63	4.81	8.69		1.29
Sample Size		23			202	57		217	7	4	6		516

- Continued -

Table 10. (p. 8 of 8)

	Age Group													
	0.2	0.3	1.2	2.1	0.4	1.3	2.2	1.4	2.3	3.2	2.4	3.3	Total	
<b>All Periods Combined:</b>														
MALES	3,587	12,870	135,759		18	1,059	525,077	90,011	5,003	263,532	1,044	2,517	326	1,040,803
Percent	0.16	0.56	5.89		0.00	0.05	22.77	3.90	0.22	11.43	0.05	0.11	0.01	45.14
Std. Error		0.01	0.04				0.03	0.03	0.01	0.02				
Mean Length(mm)	491	585	502		541	648	581	502	614	586	548	565	561	565
Std. Error	21.68	9.60	3.03				1.31	3.18	18.36	1.59	18.76	5.85	8.15	0.93
Sample Size	5	21	402		1	1	1,687	327	19	871	5	8	3	3,350
FEMALES	1,185	24,343	70,414				739,337	70,219	5,206	349,248	1,620	2,555	777	1,264,904
Percent	0.05	1.06	3.05				32.07	3.05	0.23	15.15	0.07	0.11	0.03	54.86
Std. Error		0.12	0.05				0.07	0.06	0.10	0.07				
Mean Length(mm)	565	563	509				566	521	596	571	523	583	578	562
Std. Error	3.13	3.92					0.74	3.72	6.34	1.17	9.28	18.43	15.35	0.62
Sample Size	1	41	216				2,250	236	18	1,170	5	9	4	3,950
BOTH SEXES	4,772	37,213	206,173		18	1,059	1,264,414	160,230	10,209	612,780	2,664	5,072	1,103	2,305,707
Percent	0.21	1.61	8.94		0.00	0.05	54.84	6.95	0.44	26.58	0.12	0.22	0.05	100.00
Std. Error		0.12	0.09				0.10	0.09	0.11	0.10				
Mean Length(mm)	510	570	504		541	648	572	510	605	578	533	574	573	563
Std. Error	21.68	3.92	2.40				0.70	2.42	12.35	0.96	9.63	10.28	8.69	0.54
Sample Size	6	62	618		1	1	3,937	563	37	2,041	10	17	7	7,300

Table 11. Age, sex and length composition of sockeye salmon harvested in the Cohoe/Ninilchik commercial set gill net fishery, Upper Cook Inlet, Alaska, in 1990.

	Age Group									
	1.1	0.3	1.2	1.3	2.2	1.4	2.3	3.2	2.4	Total
<b>Sample Period 1: 2 - 8 July</b>										
Males		1,215		1,264		1,199		1,055		4,733
Percent		14.42		15.00		14.23		12.52		56.16
Std. Error		0.09		0.04		0.08		0.05		
Mean Length(mm)		460		529		467		521		494
Std. Error		3.25		4.25		5.27		4.41		2.17
Sample Size		76		79		75		66		296
Females		528		1,487		656		1,007		16
Percent		6.27		17.65		7.78		11.95		0.19
Std. Error		0.02		0.06		0.02		0.05		0.19
Mean Length(mm)		468		527		474		527		542
Std. Error		7.45		3.13		5.58		3.46		2.14
Sample Size		33		93		41		63		1
Both Sexes		1,743		2,751		1,855		2,062		16
Percent		20.68		32.65		22.01		24.47		0.19
Std. Error		0.11		0.10		0.10		0.09		0.19
Mean Length(mm)		463		528		469		524		542
Std. Error		3.20		2.59		3.93		2.82		1.54
Sample Size		109		172		116		129		1
<b>Sample Period 2: 9 - 17 July</b>										
Males		545		578		480		376		6
Percent		16.35		17.34		14.40		11.28		0.18
Std. Error		0.10		0.05		0.09		0.05		0.19
Mean Length(mm)		466		549		471		543		586
Std. Error		3.42		4.55		4.10		5.36		2.16
Sample Size		84		89		74		58		1
Females		214		571		221		6		337
Percent		6.42		17.13		6.63		0.18		10.11
Std. Error		0.02		0.05		0.02		0.19		0.04
Mean Length(mm)		476		539		476		555		544
Std. Error		6.36		3.72		5.91		4.14		2.35
Sample Size		33		88		34		1		52
Both Sexes		759		1,149		701		6		713
Percent		22.77		34.46		21.03		0.18		21.39
Std. Error		0.12		0.10		0.11		0.19		0.10
Mean Length(mm)		469		544		473		555		543
Std. Error		3.04		2.94		3.37		3.44		586
Sample Size		117		177		108		1		110

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Table 11. (p. 2 of 3)

	Age Group									
	1.1	0.3	1.2	1.3	2.2	1.4	2.3	3.2	2.4	Total
<b>Sample Period 3: 18 - 21 July</b>										
Males	161	3,536	8,758	5,866	161	6,187				24,669
Percent	0.37	8.04	19.93	13.35	0.37	14.08				56.12
Std. Error	0.18	0.08	0.06	0.06	0.08	0.05				
Mean Length(mm)	557	466	571	466	629	570				531
Std. Error	47.00	6.19	3.80	4.43	13.50	4.72				2.29
Sample Size	2	44	109	72	2	77				306
Females		1,848	7,152	4,178	80	6,027				19,285
Percent		4.20	16.27	9.51	0.18	13.71				43.88
Std. Error		0.02	0.04	0.03	0.02	0.04				
Mean Length(mm)		467	549	466	579	549				523
Std. Error		5.65	3.76	4.73		3.57				2.13
Sample Size		23	89	52	1	75				240
Both Sexes	161	5,384	15,910	10,044	241	12,214				43,954
Percent	0.37	12.25	36.20	22.85	0.55	27.79				100.00
Std. Error	0.18	0.10	0.09	0.09	0.10	0.09				
Mean Length(mm)	557	466	561	466	612	560				528
Std. Error	47.00	4.51	2.69	3.25	13.50	2.97				1.59
Sample Size	2	67	198	124	3	152				546
<b>Sample Period 4: 22 - 29 July</b>										
Males		7,733	15,931	13,301		14,229	155			51,349
Percent		9.21	18.97	15.84		16.94	0.18			61.14
Std. Error		0.11	0.05	0.10		0.06	0.18			
Mean Length(mm)		459	564	470		561	470			523
Std. Error		4.43	3.46	3.48		4.10				1.92
Sample Size		50	103	86		92	1			332
Females	155	2,475	14,693	4,795		10,517				32,635
Percent	0.18	2.95	17.49	5.71		12.52				38.86
Std. Error	0.18	0.01	0.04	0.01		0.03				
Mean Length(mm)	555	465	549	471		560				535
Std. Error		8.63	3.26	6.08		3.33				2.13
Sample Size	1	16	95	31		68				211
Both Sexes	155	10,208	30,624	18,096		24,746	155			83,984
Percent	0.18	12.15	36.46	21.55		29.47	0.18			100.00
Std. Error	0.18	0.12	0.09	0.11		0.09	0.18			
Mean Length(mm)	555	460	557	471		561	470			528
Std. Error		3.96	2.38	3.02		2.75				1.44
Sample Size	1	66	198	117		160	1			543

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Table 11. (p. 3 of 3)

	Age Group									
	1.1	0.3	1.2	1.3	2.2	1.4	2.3	3.2	2.4	Total
<b>Sample Period 5: 30 July - 15 August</b>										
Males		5,147		9,825		3,392		351		6,901
Percent		8.73		16.67		5.75		0.60		11.71
Std. Error		0.03		0.04		0.04		0.20		0.04
Mean Length(mm)		480		578		449		621		589
Std. Error		7.70		3.82		7.47		19.55		4.26
Sample Size		44		84		29		3		59
Females	117		7,369		12,984		4,445		8,422	
Percent	0.20		12.50		22.02		7.54		14.29	
Std. Error	0.20		0.07		0.06		0.06		0.06	
Mean Length(mm)	395		476		545		478		555	
Std. Error		5.06		3.24		6.08		4.19		2.15
Sample Size	1		63		111		38		72	
Both Sexes	117		12,516		22,809		7,837		351	
Percent	0.20		21.23		38.69		13.29		0.60	
Std. Error	0.20		0.10		0.10		0.10		0.20	
Mean Length(mm)	395		478		560		465		621	
Std. Error		4.34		2.47		4.73		19.55		3.00
Sample Size	1		107		195		67		3	
										533
										1.67
										504
<b>All Periods Combined:</b>										
Males		161		18,176		36,356		24,238		512
Percent		0.08		9.15		18.30		12.20		0.26
Std. Error				0.03		0.04		0.04		0.20
Mean Length(mm)		557		467		568		466		623
Std. Error		47.00		3.13		2.06		2.44		14.47
Sample Size		2		298		464		336		5
Females	117		155		12,434		36,887		14,295	
Percent	0.06		0.08		6.26		18.57		7.20	
Std. Error	0.20			0.07		0.06		0.06		0.04
Mean Length(mm)	395		555		472		547		472	
Std. Error				3.57		1.88		3.12		577
Sample Size	1		1		168		476		196	
										2.06
										555
										542
										527
										1.20
										1,175
Both Sexes	117		316		30,610		73,243		38,533	
Percent	0.06		0.16		15.41		36.87		19.40	
Std. Error	0.20			0.10		0.10		0.10		0.20
Mean Length(mm)	395		556		469		557		468	
Std. Error		47.00		2.36		1.39		1.92		1.92
Sample Size	1		3		466		940		532	
										14.06
										1.63
										617
										562
										470
										554
										528
										0.86
										2,634

Table 12. Age, sex and length composition of sockeye salmon harvested in the Kalifonsky Beach commercial set gill net fishery, Upper Cook Inlet, Alaska, in 1990.

	Age Group									
	0.3	1.2	1.3	2.2	1.4	2.3	3.2	2.4	3.3	Total
<b>Sample Period 1: 2 July</b>										
Males	334	448	318		546					1,646
Percent	11.32	15.19	10.78		18.51					55.80
Std. Error	0.17	0.06	0.13		0.07					
Mean Length(mm)	490	558	504		548					531
Std. Error	5.73	5.30	5.79		3.21					2.41
Sample Size	41	55	39		67					202
Females	8	90	538	147		513		8		1,304
Percent	0.27	3.05	18.24	4.98		17.39		0.27		44.20
Std. Error	0.28	0.01	0.08	0.03		0.06		0.28		
Mean Length(mm)	592	505	551	522		548		552		544
Std. Error	7.29	2.99	7.93		2.56					1.89
Sample Size	1	11	66	18		63		1		160
Both Sexes	8	424	986	465		1,059		8		2,950
Percent	0.27	14.37	33.42	15.76		35.90		0.27		100.00
Std. Error	0.28	0.18	0.14	0.16		0.14		0.28		
Mean Length(mm)	592	493	554	510		548		552		536
Std. Error	4.77	2.91	4.68		2.07					1.58
Sample Size	1	52	121	57		130		1		362
<b>Sample Period 2: 6 - 9 July</b>										
Males	1,019	1,813	974		1,034					4,840
Percent	12.57	22.37	12.02		12.76					59.71
Std. Error	0.11	0.05	0.11		0.06					
Mean Length(mm)	467	557	478		537					518
Std. Error	3.79	3.78	4.75		3.69					2.04
Sample Size	68	121	65		69					323
Females	315	1,812	315	30	794					3,266
Percent	3.89	22.35	3.89	0.37	9.80					40.29
Std. Error	0.01	0.05	0.01	0.18	0.03					
Mean Length(mm)	463	544	480	556	530					527
Std. Error	7.53	2.50	6.68	1.00	3.69					1.92
Sample Size	21	121	21	2	53					218
Both Sexes	1,334	3,625	1,289	30	1,828					8,106
Percent	16.46	44.72	15.90	0.37	22.55					100.00
Std. Error	0.12	0.09	0.12	0.18	0.09					
Mean Length(mm)	466	550	479	556	534					521
Std. Error	3.40	2.27	3.94	1.00	2.65					1.44
Sample Size	89	242	86	2	122					541

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Table 12. (p. 2 of 3)

	Age Group									
	0.3	1.2	1.3	2.2	1.4	2.3	3.2	2.4	3.3	Total
<b>Sample Period 3: 16 - 23 July</b>										
Males	409	17,578	64,589	14,308	409	25,345				122,638
Percent	0.18	7.95	29.21	6.47	0.18	11.46				55.45
Std. Error	0.18	0.11	0.05	0.09	0.18	0.05				
Mean Length(mm)	453	493	565	497	605	563				546
Std. Error		8.31	2.75	7.41		4.93				2.30
Sample Size	1	43	158	35	1	62				300
Females		5,314	64,590	5,723		22,892				98,519
Percent		2.40	29.21	2.59		10.35				44.55
Std. Error		0.01	0.05	0.02		0.04				
Mean Length(mm)		459	555	504		560				548
Std. Error		8.35	1.89	11.17		4.33				1.78
Sample Size		13	158	14		56				241
Both Sexes	409	22,892	129,179	20,031	409	48,237				221,157
Percent	0.18	10.35	58.41	9.06	0.18	21.81				100.00
Std. Error	0.18	0.12	0.09	0.11	0.18	0.09				
Mean Length(mm)	453	485	560	499	605	562				547
Std. Error		6.67	1.67	6.18		3.31				1.50
Sample Size	1	56	316	49	1	118				541
<b>Sample Period 4: 25 July - 15 August</b>										
Males	8,611	45,676	10,108	1,123	39,685		374	374	105,951	
Percent	4.46	23.64	5.23	0.58	20.54		0.19	0.19	54.84	
Std. Error	0.09	0.04	0.13	0.05	0.07		0.01	0.19		
Mean Length(mm)	498	586	498	606	592		598	605	573	
Std. Error	8.46	2.76	7.57	29.02	2.85					1.91
Sample Size	23	122	27	3	106		1	1	283	
Females	4,118	49,045	2,246	1,123	28,453	749	1,498		87,232	
Percent	2.13	25.39	1.16	0.58	14.73	0.39	0.78		45.16	
Std. Error	0.02	0.05	0.01	0.05	0.03	0.19	0.12			
Mean Length(mm)	487	563	512	608	570	503	574		560	
Std. Error	6.25	2.14	9.97	3.00	2.94	2.50	7.51		1.59	
Sample Size	11	131	6	3	76	2	4		233	
Both Sexes	12,729	94,721	12,354	2,246	68,138	749	1,872	374	193,183	
Percent	6.59	49.03	6.39	1.16	35.27	0.39	0.97	0.19	100.00	
Std. Error	0.11	0.10	0.14	0.10	0.10	0.19	0.13	0.19		
Mean Length(mm)	494	574	500	607	583	503	578	605	567	
Std. Error	6.07	1.73	6.45	14.59	2.06	2.50	7.51		1.27	
Sample Size	34	253	33	6	182	2	5	1	516	
<b>All Periods Combined:</b>										
Males	409	27,542	112,526	25,708	1,532	66,610		374	374	235,075
Percent	0.10	6.47	26.45	6.04	0.36	15.66		0.09	0.09	55.26
Std. Error	0.09	0.04	0.13	0.05	0.07		0.01	0.19		

- Continued -

Table 12. (p. 3 of 3)

	Age Group									
	0.3	1.2	1.3	2.2	1.4	2.3	3.2	2.4	3.3	Total
Mean Length(mm)	453	493	573	497	606	580		598	605	557
Std. Error		5.93	1.94	5.09	29.02	2.53				1.48
Sample Size	1	175	456	166	4	304		1	1	1,108
Females	8	9,837	115,985	8,431	1,153	52,652	749	1,506		190,321
Percent	0.00	2.31	27.27	1.98	0.27	12.38	0.18	0.35		44.74
Std. Error		0.02	0.05	0.01	0.05	0.03	0.19	0.12		
Mean Length(mm)	592	471	558	506	607	565	503	573		553
Std. Error		5.22	1.39	8.04	2.92	2.46	2.50	7.51		1.18
Sample Size	1	56	476	59	5	248	2	5		852
Both Sexes	417	37,379	228,511	34,139	2,685	119,262	749	1,880	374	425,396
Percent	0.10	8.79	53.72	8.03	0.63	28.04	0.18	0.44	0.09	100.00
Std. Error		0.11	0.10	0.14	0.10	0.10	0.19	0.13	0.19	
Mean Length(mm)	456	487	566	499	606	573	503	578	605	556
Std. Error		4.58	1.18	4.32	14.40	1.78	2.50	7.51		0.97
Sample Size	2	231	932	225	9	552	2	6	1	1,960

Table 13. Age, sex and length composition of sockeye salmon harvested in the Salamatof Beach commercial set gill net fishery, Upper Cook Inlet, Alaska, in 1990.

	Age Group											
	1.1	0.3	1.2	2.1	1.3	2.2	1.4	2.3	3.2	2.4	3.4	Total
<b>Sample Period 1: 2 - 12 July</b>												
Males	930		4,047	1,056		1,181						7,214
Percent	7.02		30.55	7.97		8.92						54.46
Std. Error	0.11		0.05	0.10		0.05						
Mean Length(mm)	478		582	509		583						558
Std. Error	5.58		2.62	5.34		5.85						2.05
Sample Size	37		161	42		47						287
Females	276		4,123	377	50	1,181		25				6,032
Percent	2.08		31.13	2.85	0.38	8.92		0.19				45.54
Std. Error	0.01		0.05	0.01	0.19	0.05		0.19				
Mean Length(mm)	518		569	529	601	574		571				565
Std. Error	6.34		1.70	6.01	31.00	4.22						1.52
Sample Size	11		164	15	2	47		1				240
Both Sexes	1,206		8,170	1,433	50	2,362		25				13,246
Percent	9.10		61.68	10.82	0.38	17.83		0.19				100.00
Std. Error	0.12		0.09	0.12	0.19	0.09		0.19				
Mean Length(mm)	487		575	515	601	579		571				561
Std. Error	4.54		1.55	4.24	31.00	3.61						1.31
Sample Size	48		325	57	2	94		1				527
<b>Sample Period 2: 13 - 19 July</b>												
Males	11,355		33,834	8,574	695	10,196	232	463				65,349
Percent	9.26		27.60	6.99	0.57	8.32	0.19	0.38				53.31
Std. Error	0.12		0.04	0.09	0.05	0.04	0.19	0.19				
Mean Length(mm)	486		579	504	610	582	491	624				554
Std. Error	5.61		3.27	6.74	8.95	6.02		18.00				2.35
Sample Size	49		146	37	3	44	1	2				282

- Continued -

Table 13. (p. 2 of 4)

	Age Group												
	1.1	0.3	1.2	2.1	1.3	2.2	1.4	2.3	3.2	2.4	3.4	Total	
Females		3,013		36,846	3,939	695	12,745					57,238	
Percent		2.46		30.06	3.21	0.57	10.40					46.69	
Std. Error		0.01		0.05	0.02	0.05	0.06						
Mean Length(mm)		502		567	526	616	567					561	
Std. Error		5.90		2.91	6.51	2.73	4.00					2.14	
Sample Size		13		159	17	3	55					247	
Both Sexes		14,368		70,680	12,513	1,390	22,941	232	463			122,587	
Percent		11.72		57.66	10.21	1.13	18.71	0.19	0.38			100.00	
Std. Error		0.13		0.09	0.11	0.09	0.10	0.19	0.19				
Mean Length(mm)		490		573	511	613	574	491	624			557	
Std. Error		4.60		2.18	5.06	4.68	3.48		18.00			1.60	
Sample Size		62		305	54	6	99	1	2			529	
Sample Period 3: 20 - 26 July													
Males	507	16,746		55,820	9,641	2,030	39,073	507				124,324	
Percent	0.20	6.55		21.83	3.77	0.79	15.28	0.20				48.61	
Std. Error	0.02	0.15		0.04	0.04	0.20	0.04	0.05					
Sample Size	1	33		110	19	4	77	1				245	
Mean Length(mm)	596	475		586	511	628	595	502				568	
Std. Error		5.91		2.66	7.36	7.54	3.41					1.88	
Sample Size	1	33		110	19	4	76	1				244	
Females	1,015	2,537		65,461	10,656		50,237	507	1,015			131,428	
Percent	0.40	0.99		25.60	4.17		19.64	0.20	0.40			51.39	
Std. Error	0.09	0.00		0.06	0.05		0.06	0.05	0.20				
Mean Length(mm)	575	504		560	523		572	488	576			560	
Std. Error	29.50	13.56		1.98	5.84		2.12		24.00			1.42	
Sample Size	2	5		128	21		99	1	2			258	
Both Sexes	1,522	19,283		121,281	20,297	2,030	89,310	1,014	1,015			255,752	
Percent	0.60	7.54		47.42	7.94	0.79	34.92	0.40	0.40			100.00	
Std. Error	0.11	0.15		0.10	0.10	0.20	0.10	0.10	0.20				

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Table 13. (p. 3 of 4)

	Age Group												
	1.1	0.3	1.2	2.1	1.3	2.2	1.4	2.3	3.2	2.4	3.4	Total	
Mean Length(mm)	582	479		572	517	628	582	495	576			564	
Std. Error	29.50	5.43		1.63	4.65	7.54	1.91		24.00			1.17	
Sample Size	3	38		238	40	4	175	2	2			502	
Sample Period 4: 27 July - 15 August													
Males	195		8,006	391	18,355	4,686	391	19,135	195			51,354	
Percent	0.19		7.90	0.39	18.11	4.62	0.39	18.88	0.19			50.67	
Std. Error	0.19		0.08	0.19	0.05	0.04	0.05	0.04	0.05				
Mean Length(mm)	374		456	357	576	468	626	585	494			549	
Std. Error			9.17	25.00	3.45	9.28	2.50	3.14				2.38	
Sample Size	1		41	2	94	24	2	98	1			263	
Females			4,296		17,574	5,467	391	20,698	195	1,172	195	49,988	
Percent			4.24		17.34	5.39	0.39	20.42	0.19	1.16	0.19	49.33	
Std. Error			0.02		0.05	0.06	0.05	0.05	0.05	0.19	0.19		
Mean Length(mm)			477		559	497	610	563	499	566	609	547	
Std. Error			5.87		2.71	4.01	21.00	2.31		12.50		1.54	
Sample Size			22		90	28	2	106	1	6	1	256	
Both Sexes	195		12,302	391	35,929	10,153	782	39,833	390	1,172	195	101,342	
Percent	0.19		12.14	0.39	35.45	10.02	0.77	39.31	0.38	1.16	0.19	100.00	
Std. Error	0.19		0.11	0.19	0.10	0.10	0.10	0.10	0.10	0.19	0.19		
Mean Length(mm)	374		464	357	568	484	618	574	497	566	609	548	
Std. Error			6.31	25.00	2.20	4.80	10.57	1.93		12.50		1.43	
Sample Size	1		63	2	184	52	4	204	2	6	1	519	
All Periods Combined:													
Males	195	507	37,037	391	112,056	23,957	3,116	69,585	934	463		248,241	
Percent	0.04	0.10	7.51	0.08	22.73	4.86	0.63	14.12	0.19	0.09		50.36	
Std. Error	0.19		0.08	0.19	0.05	0.04	0.05	0.04	0.05				
Mean Length(mm)	374	596	475	357	582	500	623	590	498	624		560	
Std. Error			3.75	25.00	1.75	4.24	5.31	2.28		18.00		1.23	
Sample Size	1	1	160	2	511	122	9	265	3	2		1,076	

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Table 13. (p. 4 of 4)

	Age Group												
	1.1	0.3	1.2	2.1	1.3	2.2	1.4	2.3	3.2	2.4	3.4	Total	
Females	1,015	10,122		124,004	20,439	1,136	84,861	702	2,212	195	244,686		
Percent	0.21	2.05		25.16	4.15	0.23	17.22	0.14	0.45	0.04	49.64		
Std. Error		0.02		0.05	0.06	0.05	0.05	0.05	0.19	0.19			
Mean Length(mm)	575	493		562	517	613	569	491	571	609	558		
Std. Error	29.50	4.57		1.41	3.46	7.54	1.51		13.00		0.97		
Sample Size	2	51		541	81	7	307	2	9	1	1,001		
Both Sexes	195	1,522	47,159	391	236,060	44,396	4,252	154,446	1,636	2,675	195	492,927	
Percent	0.04	0.31	9.57	0.08	47.89	9.01	0.86	31.33	0.33	0.54	0.04	100.00	
Std. Error	0.19		0.11	0.19	0.10	0.10	0.10	0.10	0.10	0.19	0.19		
Mean Length(mm)	374	582	479	357	572	508	621	579	495	580	609	559	
Std. Error	29.50	3.10	25.00	1.11	2.79	4.38	1.32		11.18		0.78		
Sample Size	1	3	211	2	1,052	203	16	572	5	11	1	2,077	

Table 14. Age, sex and length composition of sockeye salmon escapement in Kenai River, Upper Cook Inlet, Alaska, in 1990.

	Age Group										
	1.1	0.3	1.2	2.1	1.3	2.2	1.4	2.3	3.2	2.4	Total
<b>Sample Period 1: 1 - 16 July</b>											
Males	127	2,290		14,377	1,781	254	3,689				22,518
Percent	0.28	5.08		31.92	3.95	0.56	8.19				50.00
Mean Length(mm)	592	516		584	532	605	589				574
Std. Error		12.71		3.98	8.82	9.00	7.33				3.17
Sample Size	1	18		113	14	2	29				177
Females		1,908		13,613	3,308	127	3,562				22,518
Percent		4.24		30.23	7.35	0.28	7.91				50.00
Mean Length(mm)		468		558	511	589	567				545
Std. Error		11.72		2.86	7.16		4.99				2.39
Sample Size		15		107	26	1	28				177
Both Sexes	127	4,198		27,990	5,089	381	7,251				45,036
Percent	0.28	9.32		62.15	11.30	0.85	16.10				100.00
Mean Length(mm)	592	494		572	519	600	578				560
Std. Error		8.74		2.47	5.59	9.00	4.46				1.99
Sample Size	1	33		220	40	3	57				354
<b>Sample Period 2: 17 - 24 July</b>											
Males	586		50,409	586	84,993	26,377	1,172	41,617	586	1,172	207,498
Percent	0.18		15.06	0.18	25.39	7.88	0.35	12.43	0.18	0.35	62.00
Mean Length(mm)	379		483	394	582	497	612	586	522	607	547
Std. Error			5.47		3.66	6.46	36.00	4.76		8.00	2.38
Sample Size	1		86	1	145	45	2	71	1	2	354

- Continued -

Table 14. (p. 2 of 3)

	Age Group										
	1.1	0.3	1.2	2.1	1.3	2.2	1.4	2.3	3.2	2.4	Total
Females	1,172	20,515		65,063	18,171		22,274				127,195
Percent	0.35	6.13		19.44	5.43		6.66				38.00
Mean Length(mm)	532	492		560	506		567				542
Std. Error		4.84		2.51	5.06		5.24				1.91
Sample Size	2	35		111	31		38				217
Both Sexes	586	1,172	70,924	586	150,056	44,548	1,172	63,891	586	1,172	334,693
Percent	0.18	0.35	21.19	0.18	44.83	13.31	0.35	19.09	0.18	0.35	100.00
Mean Length(mm)	379	532	485	394	572	500	612	580	522	607	545
Std. Error			4.13		2.34	4.35	36.00	3.60		8.00	1.64
Sample Size	1	2	121	1	256	76	2	109	1	2	571
Sample Period 3: 25 July - 7 August											
Males	2,379		30,454	952	47,584	13,799	1,903	36,639		476	134,186
Percent	0.85		10.88	0.34	17.01	4.93	0.68	13.10		0.17	47.96
Mean Length(mm)	364		458	370	595	485	614	591		636	546
Std. Error	12.33		6.87		3.14	10.52	14.40	4.75			2.57
Sample Size	5		64	2	100	29	4	77		1	282
Females	952	476	36,639	476	47,583	26,647	476	31,405	952		145,606
Percent	0.34	0.17	13.10	0.17	17.01	9.52	0.17	11.22	0.34		52.04
Mean Length(mm)	405	577	470	371	558	487	599	568	466		523
Std. Error	8.50		4.13		3.11	4.93		3.94	8.00		1.91
Sample Size	2	1	77	1	100	56	1	66	2		306

- Continued -

Table 14. (p. 3 of 3)

	Age Group										
	1.1	0.3	1.2	2.1	1.3	2.2	1.4	2.3	3.2	2.4	Total
Both Sexes	3,331	476	67,093	1,428	95,167	40,446	2,379	68,044	952	476	279,792
Percent	1.19	0.17	23.98	0.51	34.01	14.46	0.85	24.32	0.34	0.17	100.00
Mean Length(mm)	376	577	464	370	577	486	611	581	466	636	534
Std. Error	9.13		3.85		2.21	4.84	14.40	3.14	8.00		1.59
Sample Size	7	1	141	3	200	85	5	143	2	1	588
All Periods Combined:											
Males	2,965	127	83,153	1,538	146,954	41,957	3,329	81,945	586	1,648	364,202
Percent	0.45	0.02	12.61	0.23	22.28	6.36	0.50	12.42	0.09	0.25	55.22
Mean Length(mm)	367	592	474	379	586	494	613	589	522	615	548
Std. Error	12.33		4.18		2.38	5.35	15.13	3.24		8.00	1.66
Sample Size	6	1	168	3	358	88	8	177	1	3	813
Females	952	1,648	59,062	476	126,259	48,126	603	57,241	952		295,319
Percent	0.14	0.25	8.96	0.07	19.14	7.30	0.09	8.68	0.14		44.78
Mean Length(mm)	405	545	478	371	559	496	597	568	466		533
Std. Error	8.50		3.09		1.77	3.37		2.99	8.00		1.26
Sample Size	2	3	127	1	318	113	2	132	2		700
Both Sexes	3,917	1,775	142,215	2,014	273,213	90,083	3,932	139,186	1,538	1,648	659,521
Percent	0.59	0.27	21.56	0.31	41.43	13.66	0.60	21.10	0.23	0.25	100.00
Mean Length(mm)	376	548	476	377	574	495	610	580	487	615	541
Std. Error	9.13		2.76		1.52	3.07	15.13	2.27	8.00	8.00	1.08
Sample Size	8	4	295	4	676	201	10	309	3	3	1,513

Table 15. Age, sex and size composition of sockeye salmon escapement in Hidden Creek, Kenai River drainage, Upper Cook Inlet, Alaska, in 1990.

	Age Group					
	1.2	2.1	1.3	2.2	2.3	Total
Sample period:	15 July - 30 August					
MALES	26,680	109	765	3,499	109	31,162
Percent	34.22	0.14	0.98	4.49	0.14	39.97
Sample Size	244	1	7	32	1	285
Mean Length(mm)	523	534	564	534	605	526
Std. Error	1.61		15.54	4.36		1.51
Sample Size	244	1	7	32	1	285
Mean Weight(kg)	2.14	2.10	2.74	2.21	3.10	2.17
Std. Error	0.02		0.25	0.07		0.02
Sample Size	226	1	5	32	1	265
FEMALES	40,674		437	5,686		46,797
Percent	52.17		0.56	7.29		60.03
Sample Size	372		4	52		428
Mean Length(mm)	496		567	504		498
Std. Error	1.27		12.75	4.11		1.21
Sample Size	372		4	52		428
Mean Weight(kg)	1.71		2.50	1.76		1.72
Std. Error	0.01		0.26	0.04		0.01
Sample Size	351		4	48		403
BOTH SEXES	67,354	109	1,202	9,185	109	77,959
Percent	86.40	0.14	1.54	11.78	0.14	100.00
Sample Size	616	1	11	84	1	713
Mean Length(mm)	507	534	565	516	605	509
Std. Error	1.00		10.92	3.04		0.95
Sample Size	616	1	11	84	1	713
Mean Weight(kg)	1.88	2.10	2.65	1.93	3.10	1.90
Std. Error	0.01		0.19	0.04		0.01
Sample Size	577	1	9	80	1	668

Table 16. Age, sex and length composition of sockeye salmon escapement in Kaslof River, Upper Cook Inlet, Alaska, in 1990.

	Age Group								
	1.1	0.3	1.2	1.3	2.2	1.4	2.3	3.2	Total
<b>Sample Period 1: 15 June - 7 July</b>									
Males	83	5,045	4,052	3,060		3,804			16,044
Percent	0.27	16.71	13.42	10.14		12.60			53.15
Mean Length(mm)	471	470	528	469		534			500
Std. Error		3.67	4.40	4.37		3.23			1.96
Sample Size	1	61	49	37		46			194
Females		2,481	5,623	2,564	83	3,391			14,142
Percent		8.22	18.63	8.49	0.27	11.23			46.85
Mean Length(mm)		467	531	470	592	533			510
Std. Error		3.04	2.70	4.36		3.30			1.64
Sample Size		30	68	31	1	41			171
Both Sexes	83	7,526	9,675	5,624	83	7,195			30,186
Percent	0.27	24.93	32.05	18.63	0.27	23.84			100.00
Mean Length(mm)	471	469	530	469	592	533			504
Std. Error		2.66	2.42	3.10		2.31			1.30
Sample Size	1	91	117	68	1	87			365
<b>Sample Period 2: 8 July - 15 August</b>									
Males	574		22,388	9,185	19,231		4,879		56,257
Percent	0.50		19.65	8.06	16.88		4.28		49.37
Mean Length(mm)	340		460	514	451		499		468
Std. Error	8.00		3.41	5.48	4.01		9.29		2.27
Sample Size	2		78	32	67		17		196
Females		17,509	10,907	22,962	287	5,741	287		57,693
Percent		15.37	9.57	20.15	0.25	5.04	0.25		50.63
Mean Length(mm)		457	518	456	560	527	420		475
Std. Error		3.10	5.56	2.74		5.23			1.86
Sample Size		61	38	80	1	20	1		201
Both Sexes	574		39,897	20,092	42,193	287	10,620	287	113,950
Percent	0.50		35.01	17.63	37.03	0.25	9.32	0.25	100.00
Mean Length(mm)	340		459	516	454	560	514	420	472
Std. Error	8.00		2.35	3.92	2.36		5.12		1.46
Sample Size	2		139	70	147	1	37	1	397

- Continued -

Table 16. (p. 2 of 2)

	Age Group								
	1.1	0.3	1.2	1.3	2.2	1.4	2.3	3.2	Total
<b>All Periods Combined:</b>									
Males	574	83	27,433	13,237	22,291		8,683		72,301
Percent	0.40	0.06	19.03	9.18	15.47		6.02		50.16
Mean Length(mm)	340	471	462	518	453		514		475
Std. Error	8.00		2.86	4.03	3.51		5.41		1.82
Sample Size	2	1	139	81	104		63		390
Females			19,990	16,530	25,526	370	9,132	287	71,835
Percent			13.87	11.47	17.71	0.26	6.34	0.20	49.84
Mean Length(mm)			458	523	457	567	529	420	482
Std. Error			2.74	3.78	2.50		3.51		1.53
Sample Size			91	106	111	2	61	1	372
Both Sexes	574	83	47,423	29,767	47,817	370	17,815	287	144,136
Percent	0.40	0.06	32.90	20.65	33.17	0.26	12.36	0.20	100.00
Mean Length(mm)	340	471	460	521	455	567	522	420	479
Std. Error	8.00		2.02	2.76	2.11		3.19		1.19
Sample Size	2	1	230	187	215	2	124	1	762

Table 17. Age, sex and length composition of sockeye salmon harvested in the Western Subdistrict commercial set gill net fishery, Upper Cook Inlet, Alaska, in 1990.

	Age Group							
	1.2	1.3	2.2	1.4	2.3	2.4	3.3	Total
Sample period:	18 June - 10 September							
Males	643	3,728	1,478	32	5,400	32		11,313
Percent	2.96	17.16	6.80	0.15	24.85	0.15		52.07
Mean Length(mm)	477	566	492	541	569	585		552
Std. Error	10.25	2.25	5.00		2.17			1.54
Sample Size	20	116	46	1	168	1		352
Females	129	4,982	257	64	4,918	32	32	10,414
Percent	0.59	22.93	1.18	0.29	22.64	0.15	0.15	47.93
Mean Length(mm)	514	548	532	557	552	543	556	549
Std. Error	15.64	1.81	7.92	12.50	1.70			1.21
Sample Size	4	155	8	2	153	1	1	324
Both Sexes	772	8,710	1,735	96	10,318	64	32	21,727
Percent	3.55	40.09	7.99	0.44	47.49	0.29	0.15	100.00
Mean Length(mm)	483	556	498	551	560	564	556	551
Std. Error	8.93	1.41	4.42	12.50	1.39			0.99
Sample Size	24	271	54	3	321	2	1	676

Table 18. Age, sex and length composition of sockeye salmon escapement in Crescent River, Upper Cook Inlet, Alaska, in 1990.

	Age Group								
	0.3	1.2	2.1	1.3	2.2	1.4	2.3	2.4	Total
<b>Sample Period 1: 26 June - 23 July</b>									
Males	104	933		10,888	1,037	104	13,584		26,650
Percent	0.27	2.41		28.07	2.67	0.27	35.03		68.72
Mean Length(mm)	610	543		591	527	590	603		593
Std. Error		11.55		4.74	8.57		1.98		2.24
Sample Size	1	9		105	10	1	131		257
Females	104	207		5,288	415	104	6,014		12,132
Percent	0.27	0.53		13.64	1.07	0.27	15.51		31.28
Mean Length(mm)	590	520		573	521	610	576		572
Std. Error		5.00		2.79	23.32		3.14		2.13
Sample Size	1	2		51	4	1	58		117
Both Sexes	208	1,140		16,176	1,452	208	19,598		38,782
Percent	0.54	2.94		41.71	3.74	0.54	50.53		100.00
Mean Length(mm)	600	539		585	525	600	595		587
Std. Error		9.50		3.32	9.05		1.67		1.68
Sample Size	2	11		156	14	2	189		374
<b>Sample Period 2: 24 July - 4 August</b>									
Males	496	62		4,899	248		2,108		7,813
Percent	3.69	0.46		36.41	1.84		15.67		58.06
Mean Length(mm)	554	340		593	490		590		584
Std. Error	19.81			2.85	15.81		3.96		2.48
Sample Size	8	1		79	4		34		126
Females	310			4,279	124		868	62	5,643
Percent	2.30			31.80	0.92		6.45	0.46	41.94
Mean Length(mm)	522			569	533		553	630	564
Std. Error	21.71			2.71	47.50		8.35		2.89
Sample Size	5			69	2		14	1	91
Both Sexes	806	62		9,178	372		2,976	62	13,456
Percent	5.99	0.46		68.21	2.76		22.12	0.46	100.00
Mean Length(mm)	542	340		582	504		579	630	576
Std. Error	14.78			1.98	19.02		3.72		1.89
Sample Size	13			148	6		48	1	217

- Continued -

Table 18. (p. 2 of 2)

	Age Group								
	0.3	1.2	2.1	1.3	2.2	1.4	2.3	2.4	Total
<b>All Periods Combined:</b>									
Males	104	1,429	62	15,787	1,285	104	15,692		34,463
Percent	0.20	2.74	0.12	30.22	2.46	0.20	30.04		65.97
Mean Length(mm)	610	547	340	592	519	590	601		591
Std. Error		10.21		3.39	7.56		1.79		1.82
Sample Size	1	17	1	184	14	1	165		383
Females	104	517		9,567	539	104	6,882	62	17,775
Percent	0.20	0.99		18.31	1.03	0.20	13.17	0.12	34.03
Mean Length(mm)	590	521		571	523	610	573	630	570
Std. Error		13.17		1.96	21.02		2.94		1.72
Sample Size	1	7		120	6	1	72	1	208
Both Sexes	208	1,946	62	25,354	1,824	208	22,574	62	52,238
Percent	0.40	3.73	0.12	48.54	3.49	0.40	43.21	0.12	100.00
Mean Length(mm)	600	540	340	584	521	600	593	630	584
Std. Error		8.27		2.23	8.18		1.53		1.34
Sample Size	2	24	1	304	20	2	237	1	591

Table 19. Age, sex and size composition of sockeye salmon escapement in Packers Creek, Kalgin Island, Upper Cook Inlet, Alaska, in 1990.

	Age Group								
	1.1	1.2	2.1	1.3	2.2	2.3	2.4	3.3	Total
<b>Sample Period 1: 29 May - 1 July</b>									
MALES	435			2,671	839	777			4,722
Percent	4.53			27.83	8.74	8.09			49.19
Sample Size	14			86	27	25			152
Mean Length(mm)	470			555	471	551			532
Std. Error	16.29			3.21	7.49	5.56			2.86
Mean Weight(kg)	1.74			2.73	1.62	2.57			2.42
Std. Error	0.20			0.06	0.08	0.09			0.04
FEMALES	280			3,261	559	777			4,877
Percent	2.92			33.97	5.82	8.09			50.81
Sample Size	9			105	18	25			157
Mean Length(mm)	492			540	488	542			531
Std. Error	9.39			2.11	5.43	4.81			1.80
Mean Weight(kg)	1.87			2.38	1.73	2.42			2.28
Std. Error	0.12			0.03	0.07	0.08			0.03
BOTH SEXES	715			5,932	1,398	1,554			9,599
Percent	7.45			61.80	14.56	16.19			100.00
Sample Size	23			191	45	50			309
Mean Length(mm)	478			547	478	547			532
Std. Error	10.57			1.85	4.99	3.68			1.68
Mean Weight(kg)	1.79			2.54	1.66	2.50			2.35
Std. Error	0.13			0.03	0.05	0.06			0.02
<b>Sample Period 2: 2 July - 12 September</b>									
MALES	137	2,062	183	1,191	6,966	458	46	46	11,089
Percent	0.62	9.26	0.82	5.35	31.28	2.06	0.21	0.21	49.80
Sample Size	3	45	4	26	152	10	1	1	242
Mean Length(mm)	328	455	451	566	481	551	590	425	486
Std. Error	8.82	4.61	17.84	5.24	3.61	17.55			2.61
Mean Weight(kg)	0.37	1.74	1.28	2.82	1.96	2.58	1.40	1.00	2.00
Std. Error	0.09	0.26	0.13	0.12	0.19	0.28			0.13

- Continued -

Table 19. (p. 2 of 2)

	Age Group								
	1.1	1.2	2.1	1.3	2.2	2.3	2.4	3.3	Total
FEMALES	1,466	183	916	8,294	321				11,180
Percent	6.58	0.82	4.11	37.24	1.44				50.20
Sample Size	32	4	20	181	7				244
Mean Length(mm)	476	493	550	481	538				488
Std. Error	4.59	7.22	4.94	1.77	12.39				1.55
Mean Weight(kg)	1.47	1.65	2.34	2.30	2.30				2.18
Std. Error	0.04	0.05	0.13	0.26	0.22				0.19
BOTH SEXES	137	3,528	366	2,107	15,260	779	46	46	22,269
Percent	0.62	15.84	1.64	9.46	68.53	3.50	0.21	0.21	100.00
Sample Size	3	77	8	46	333	17	1	1	486
Mean Length(mm)	328	464	472	559	481	545	590	425	487
Std. Error	8.82	3.30	9.62	3.66	1.91	11.51			1.52
Mean Weight(kg)	0.37	1.63	1.47	2.61	2.14	2.46	1.40	1.00	2.09
Std. Error	0.09	0.15	0.07	0.09	0.16	0.19			0.12
All Periods Combined:									
MALES	137	2,497	183	3,862	7,805	1,235	46	46	15,811
Percent	0.43	7.84	0.57	12.12	24.49	3.88	0.14	0.14	49.61
Sample Size	3	59	4	112	179	35	1	1	394
Mean Length(mm)	328	458	451	558	480	551	590	425	500
Std. Error	8.82	4.75	17.84	2.75	3.32	7.39			2.02
Mean Weight(kg)	0.37	1.74	1.28	2.76	1.92	2.57	1.40	1.00	2.12
Std. Error	0.09	0.22	0.13	0.05	0.17	0.12			0.09
FEMALES		1,746	183	4,177	8,853	1,098			16,057
Percent		5.48	0.57	13.11	27.78	3.45			50.39
Sample Size		41	4	125	199	32			401
Mean Length(mm)		478	493	542	481	541			501
Std. Error		4.13	7.22	1.97	1.69	4.97			1.21
Mean Weight(kg)		1.53	1.65	2.37	2.26	2.38			2.21
Std. Error		0.04	0.05	0.04	0.24	0.08			0.13
BOTH SEXES	137	4,243	366	8,039	16,658	2,333	46	46	31,868
Percent	0.43	13.31	1.15	25.23	52.27	7.32	0.14	0.14	100.00
Sample Size	3	100	8	237	378	67	1	1	795
Mean Length(mm)	328	466	472	550	480	546	590	425	500
Std. Error	8.82	3.27	9.62	1.67	1.80	4.56			1.17
Mean Weight(kg)	0.37	1.66	1.47	2.56	2.10	2.48	1.40	1.00	2.17
Std. Error	0.09	0.13	0.07	0.03	0.15	0.07			0.08

Table 20. Age, sex and length composition of sockeye salmon harvested in the Eastern Subdistrict commercial set gill net fishery, Upper Cook Inlet, Alaska, in 1990.

	Age Group											
	0.2	1.1	0.3	1.2	2.1	1.3	2.2	1.4	2.3	3.2	3.3	Total
<b>Sample Period 1: 4 June - 16 July</b>												
Males	29	29	1,639	14	1,926	446			288			4,371
Percent	0.36	0.36	20.61	0.18	24.22	5.61			3.62			54.97
Mean Length(mm)	349	547	471	343	547	472			568			510
Std. Error	13.50	45.50	3.75		2.99	6.70			5.13			2.09
Sample Size	2	2	114	1	134	31			20			304
Females	58	72	72	805	14	1,970	244		345			3,580
Percent	0.73	0.91	0.91	10.12	0.18	24.78	3.07		4.34			45.03
Mean Length(mm)	426	354	545	467	318	530	466		539			507
Std. Error	8.33	32.02	7.31	4.19		2.39	6.28		5.45			1.88
Sample Size	4	5	5	56	1	136	17		24			248
Both Sexes	58	101	101	2,444	28	3,896	690		633			7,951
Percent	0.73	1.27	1.27	30.74	0.35	49.00	8.68		7.96			100.00
Mean Length(mm)	426	352	546	470	331	538	470		552			509
Std. Error	8.33	23.16	14.07	2.87		1.91	4.87		3.78			1.43
Sample Size	4	7	7	170	2	270	48		44			552
<b>Sample Period 2: 17 July - 10 September</b>												
Males	25	76	2,078	25	3,804	1,698	25	1,495	76	76	9,378	
Percent	0.13	0.40	10.90	0.13	19.96	8.91	0.13	7.84	0.40	0.40	49.20	
Mean Length(mm)	465	528	491	492	566	486	620	552	500	534	531	
Std. Error		27.33	4.80		2.53	4.08		5.43	16.74	7.55	1.89	
Sample Size	1	3	82	1	150	67	1	59	3	3	370	
Females	25	25	1,774		4,311	1,470		1,901	101	76	9,683	
Percent	0.13	0.13	9.31		22.62	7.71		9.97	0.53	0.40	50.80	
Mean Length(mm)	482	543	479		543	492		537	506	552	522	
Std. Error			2.94		1.99	3.53		2.90	11.54	19.94	1.31	
Sample Size	1	1	70		170	58		75	4	3	382	
Both Sexes	50	101	3,852	25	8,115	3,168	25	3,396	177	152	19,061	
Percent	0.26	0.53	20.21	0.13	42.57	16.62	0.13	17.82	0.93	0.80	100.00	
Mean Length(mm)	474	532	485	492	554	489	620	544	503	543	526	
Std. Error		27.33	2.92		1.59	2.73		2.89	9.75	10.66	1.14	
Sample Size	2	4	152	1	320	125	1	134	7	6	752	

- Continued -

Table 20. (p. 2 of 2)

	Age Group											
	0.2	1.1	0.3	1.2	2.1	1.3	2.2	1.4	2.3	3.2	3.3	Total
<b>All Periods Combined:</b>												
Males	54	105	3,717	39	5,730	2,144	25	1,783	76	76	13,749	
Percent	0.20	0.39	13.76	0.14	21.21	7.94	0.09	6.60	0.28	0.28	50.90	
Mean Length(mm)	402	533	482	439	560	483	620	555	500	534	525	
Std. Error	13.50	23.44	3.15		1.96	3.52		4.63	16.74	7.55	1.45	
Sample Size	3	5	196	2	284	98	1	79	3	3	674	
Females	58	97	97	2,579	14	6,281	1,714		2,246	101	76	13,263
Percent	0.21	0.36	0.36	9.55	0.05	23.25	6.35		8.31	0.37	0.28	49.10
Mean Length(mm)	426	387	545	475	318	539	489		537	506	552	518
Std. Error	8.33	32.02	7.31	2.41		1.56	3.15		2.59	11.54	19.94	1.09
Sample Size	4	6	6	126	1	306	75		99	4	3	630
Both Sexes	58	151	202	6,296	53	12,011	3,858	25	4,029	177	152	27,012
Percent	0.21	0.56	0.75	23.31	0.20	44.47	14.28	0.09	14.92	0.66	0.56	100.00
Mean Length(mm)	426	392	539	479	407	549	485	620	545	503	543	521
Std. Error	8.33	23.16	14.22	2.11		1.24	2.41		2.51	9.75	10.66	0.91
Sample Size	4	9	11	322	3	590	173	1	178	7	6	1,304

Table 21. Age, sex and size composition of sockeye salmon escapement in Fish Creek, Upper Cook Inlet, Alaska, in 1990.

	Age Group							
	1.1	1.2	2.1	1.3	2.2	3.1	2.3	Total
Sample period:	10 July - 15 September							
MALES	341	7,380	341	4,656	3,747	114	568	17,147
Percent	0.70	15.15	0.70	9.56	7.69	0.23	1.17	35.20
Sample Size	3	65	3	41	33	1	5	151
Mean Length(mm)	374	511	371	543	486	390	572	510
Std. Error	4.16	6.39	8.51	8.06	7.95		8.60	3.94
Mean Weight(kg)	0.75	2.07	0.75	2.56	1.77	3.90	2.68	2.12
Std. Error	0.05	0.09	0.05	0.11	0.13		0.11	0.06
FEMALES		10,789		10,334	8,176		2,271	31,570
Percent		22.15		21.21	16.78		4.66	64.80
Sample Size		95		91	72		20	278
Mean Length(mm)		501		543	490		532	514
Std. Error		3.14		2.55	2.72		5.02	1.57
Mean Weight(kg)		1.99		2.28	1.79		1.99	2.03
Std. Error		0.08		0.06	0.09		0.07	0.04
BOTH SEXES	341	18,169	341	14,990	11,923	114	2,839	48,717
Percent	0.70	37.29	0.70	30.77	24.47	0.23	5.83	100.00
Sample Size	3	160	3	132	105	1	25	429
Mean Length(mm)	374	505	371	543	489	390	540	513
Std. Error	4.16	3.20	8.51	3.06	3.12		4.37	1.72
Mean Weight(kg)	0.75	2.02	0.75	2.37	1.78	3.90	2.13	2.06
Std. Error	0.05	0.06	0.05	0.05	0.07		0.06	0.03

Table 22. Age, sex and length composition of sockeye salmon harvested in the General Subdistrict commercial set gill net fishery, Upper Cook Inlet, Alaska, in 1990.

	Age Group								
	0.2	0.3	1.2	1.3	2.2	1.4	2.3	2.4	Total
<b>Sample Period 1: 4 June - 25 July</b>									
Males	42	1,053	5,099	506	84	1,222	42	8,048	
Percent	0.21	5.39	26.08	2.59	0.43	6.25	0.21	41.16	
Sample Size	1	25	121	12	2	29	1	191	
Mean Length(mm)	572	465	571	484	585	567	624	551	
Std. Error		7.88	2.42	11.11	19.00	5.24		2.14	
Sample Size	1	25	119	12	2	29	1	189	
Females	42	674	7,628	379	42	2,739		11,504	
Percent	0.21	3.45	39.01	1.94	0.21	14.01		58.84	
Sample Size	1	16	181	9		65		273	
Mean Length(mm)	534	496	551	483	571	551		546	
Std. Error		9.54	1.52	8.32		3.01		1.38	
Sample Size	1	16	181	9	1	65		273	
Both Sexes	84	1,727	12,727	885	126	3,961	42	19,552	
Percent	0.43	8.83	65.09	4.53	0.64	20.26	0.21	100.00	
Sample Size	2	41	302	21	3	94	1	464	
Mean Length(mm)	553	477	559	484	580	556	624	548	
Std. Error		6.08	1.33	7.28	19.00	2.63		1.20	
Sample Size	2	41	300	21	3	94	1	462	
<b>Sample Period 2: 26 July - 3 September</b>									
Males	101	203	4,558	8,306	1,924		709		15,801
Percent	0.20	0.41	9.15	16.67	3.86		1.42		31.71
Sample Size	1	2	45	82	19		7		156
Mean Length(mm)	408	581	498	561	501		575		535
Std. Error		19.00	6.67	3.33	10.63		10.63		2.95
Sample Size	1	2	45	82	19		7		156
Females		506	4,254	23,906	1,924	101	3,241	101	34,033
Percent		1.02	8.54	47.97	3.86	0.20	6.50	0.20	68.29
Sample Size		5	42	236	19	1	32	1	336
Mean Length(mm)		547	492	547	479	566	549	611	537
Std. Error		11.17	5.20	1.49	6.50		4.46		1.36
Sample Size		5	42	236	19	1	32	1	336
Both Sexes	101	709	8,812	32,212	3,848	101	3,950	101	49,834
Percent	0.20	1.42	17.68	64.64	7.72	0.20	7.93	0.20	100.00
Sample Size	1	7	87	318	38	1	39	1	492
Mean Length(mm)	408	557	495	551	490	566	554	611	536
Std. Error		9.65	4.27	1.40	6.23		4.12		1.32
Sample Size	1	7	87	318	38	1	39	1	492

- Continued -

Table 22. (p. 2 of 2)

	Age Group								
	0.2	0.3	1.2	1.3	2.2	1.4	2.3	2.4	Total
<b>All Periods Combined:</b>									
Males	101	245	5,611	13,405	2,430	84	1,931	42	23,849
Percent	0.15	0.35	8.09	19.32	3.50	0.12	2.78	0.06	34.37
Sample Size	1	3	70	203	31	2	36	1	347
Mean Length(mm)	408	579	492	565	497	585	570	624	541
Std. Error		19.00	5.62	2.26	8.73	19.00	5.12		2.09
Sample Size	1	3	70	201	31	2	36	1	345
Females		548	4,928	31,534	2,303	143	5,980	101	45,537
Percent		0.79	7.10	45.45	3.32	0.21	8.62	0.15	65.63
Sample Size		6	58	417	28	2	97	1	609
Mean Length(mm)		546	492	548	479	567	550	611	539
Std. Error		11.17	4.68	1.19	5.60		2.78		1.08
Sample Size		6	58	417	28	2	97	1	609
Both Sexes	101	793	10,539	44,939	4,733	227	7,911	143	69,386
Percent	0.15	1.14	15.19	64.77	6.82	0.33	11.40	0.21	100.00
Sample Size	1	9	128	620	59	4	133	2	956
Mean Length(mm)	408	556	492	553	489	574	555	615	540
Std. Error		9.65	3.71	1.07	5.25	19.00	2.45		1.01
Sample Size	1	9	128	618	59	4	133	2	954

Table 23. Age, sex and length composition of sockeye salmon escapement in Yentna River, Susitna River drainage, Upper Cook Inlet, Alaska, in 1990.

	Age Group											
	0.2	1.1	0.3	1.2	2.1	1.3	2.2	1.4	2.3	3.2	2.4	Total
<b>Sample Period 1: 7 - 20 July</b>												
Males	124	62	683	4,038		7,145	1,739		1,553			15,344
Percent	0.41	0.20	2.24	13.24		23.43	5.70		5.09			50.31
Sample Size	2	1	11	65		115	28		25			247
Mean Length(mm)	453	300	546	455		569	456		570			523
Std. Error	17.50		10.46	4.05		3.64	5.54		7.23			2.28
Females	62		808	2,174	62	8,572	1,491		1,988			15,157
Percent	0.20		2.65	7.13	0.20	28.10	4.89		6.52			49.69
Mean Length(mm)	430		561	453	1,370	557	458		548			534
Std. Error			6.15	6.03		2.56	7.93		6.50			2.07
Sample Size	1		13	35	1	138	24		32			244
Both Sexes	186	62	1,491	6,212	62	15,717	3,230		3,541			30,501
Percent	0.61	0.20	4.89	20.37	0.20	51.53	10.59		11.61			100.00
Sample Size	3	1	24	100	1	253	52		57			491
Mean Length(mm)	445	300	554	454	1,370	562	457		558			528
Std. Error	17.50		5.84	3.38		2.17	4.72		4.84			1.54
<b>Sample Period 2: 21 - 25 July</b>												
Males	388	55	499	6,763		8,814	1,774	111	1,885	55		20,344
Percent	0.96	0.14	1.24	16.76		21.84	4.40	0.28	4.67	0.14		50.41
Sample Size	7	1	9	122		159	32	2	34	1		367
Mean Length(mm)	454	338	601	447		578	475	609	580	490		523
Std. Error	8.27		4.69	2.66		2.96	8.63	0.50	5.92			4.83
Females			388	3,769	55	11,254	2,439		2,106			20,011
Percent			0.96	9.34	0.14	27.89	6.04		5.22			49.59
Sample Size			7	68	1	203	44		38			361
Mean Length(mm)			565	448	346	554	455		547			521
Std. Error			5.73	3.86		1.91	5.13		3.93			1.50
Both Sexes	388	55	887	10,532	55	20,068	4,213	111	3,991	55		40,355
Percent	0.96	0.14	2.20	26.10	0.14	49.73	10.44	0.28	9.89	0.14		100.00
Sample Size	7	1	16	190	1	362	76	2	72	1		728
Mean Length(mm)	454	338	585	447	346	564	463	609	563	490		522
Std. Error	8.27		3.64	2.20		1.68	4.69	0.50	3.48			1.18

-Continued-

Table 23. (p. 2 of 2)

	Age Group											
	0.2	1.1	0.3	1.2	2.1	1.3	2.2	1.4	2.3	3.2	2.4	Total
<b>Sample Period 3: 26 July - 12 August</b>												
Males	398	299	598	11,755		12,552	3,088	498	1,395			30,583
Percent	0.57	0.43	0.86	16.93		18.08	4.45	0.72	2.01			44.05
Sample Size	4	3	6	118		126	31	5	14			307
Mean Length(mm)	438	327	504	443		572	458	599	570			506
Std. Error	6.40	2.85	21.51	3.29		3.24	5.99	17.01	9.49			2.04
Females	100		398	13,448		18,430	3,188	398	2,590	199	100	38,851
Percent	0.14		0.57	19.37		26.54	4.59	0.57	3.73	0.29	0.14	55.95
Sample Size	1		4	135		185	32	4	26	2	1	390
Mean Length(mm)	428		566	445		549	454	549	532	475	520	503
Std. Error			9.23	2.50		1.82	5.80	15.92	5.07	32.00		1.38
Both Sexes	498	299	996	25,203		30,982	6,276	896	3,985	199	100	69,434
Percent	0.72	0.43	1.43	36.30		44.62	9.04	1.29	5.74	0.29	0.14	100.00
Sample Size	5	3	10	253		311	63	9	40	2	1	697
Mean Length(mm)	436	327	529	444		558	456	577	545	475	520	505
Std. Error	6.40	2.85	13.43	2.03		1.70	4.17	11.81	4.68	32.00		1.19
<b>All Periods Combined:</b>												
Males	910	416	1,780	22,556		28,511	6,601	609	4,833	55		66,271
Percent	0.65	0.30	1.27	16.08		20.32	4.71	0.43	3.45	0.04		47.24
Sample Size	13	5	26	305		400	91	7	73	1		921
Mean Length(mm)	446	324	547	446		573	462	600	574	490		515
Std. Error	5.09	2.85	8.37	2.03		1.93	3.92	13.91	4.27			1.22
Females	162		1,594	19,391		117	38,256	7,118	398	6,684	199	100
Percent	0.12		1.14	13.82		0.08	27.27	5.07	0.28	4.76	0.14	0.07
Sample Size	2		24	238		2	526	100	4	96	2	1
Mean Length(mm)	429		563	446		889	552	455	549	542	475	520
Std. Error			4.12	2.01		1.19	3.55	15.92	3.02	32.00		0.93
Both Sexes	1,072	416	3,374	41,947		117	66,767	13,719	1,007	11,517	254	100
Percent	0.76	0.30	2.41	29.90		0.08	47.59	9.78	0.72	8.21	0.18	0.07
Sample Size	15	5	50	543		2	926	191	11	169	3	1
Mean Length(mm)	444	324	555	446		889	561	459	580	555	478	520
Std. Error	5.09	2.85	4.83	1.43		1.07	2.64	10.50	2.51	32.00		0.76

Table 24. Age, sex and size composition of sockeye salmon escapement in Chelatna Lake (Lake Creek), Susitna River drainage, Upper Cook Inlet, Alaska, in 1990.

	Age Group					
	0.2	0.3	1.2	1.3	2.2	Total
Sample period:	13 July - 12 August					
MALES	170	114	454	1,193	57	1,988
Percent	3.22	2.16	8.59	22.58	1.08	37.63
Sample Size	3	2	8	21	1	35
Mean Length(mm)	578	603	583	587		586
Std. Error	43.24	7.00	20.43	12.02		9.64
Mean Weight(kg)	3.12	3.88	4.05	3.62		3.69
Std. Error	0.59	0.28	0.23	0.13		0.11
FEMALES		57	511	2,727		3,295
Percent		1.08	9.67	51.62		62.37
Sample Size		1	9	48		58
Mean Length(mm)		595	524	578		570
Std. Error			12.45	7.69		6.65
Mean Weight(kg)		3.30	2.78	3.13		3.08
Std. Error			0.33	0.06		0.07
BOTH SEXES	170	171	965	3,920	57	5,283 <sup>a</sup>
Percent	3.22	3.24	18.27	74.20	1.08	100.00
Sample Size	3	3	17	69	1	93
Mean Length(mm)	578	600	552	580		576
Std. Error	43.24	7.00	11.66	6.48		5.50
Mean Weight(kg)	3.12	3.69	3.38	3.28		3.31
Std. Error	0.59	0.28	0.20	0.06		0.06

<sup>a</sup> This represents an estimate of the in-lake spawning escapement.

Table 25. Age, sex and size composition of sockeye salmon escapement in Hewitt Creek, Susitna River drainage, Upper Cook Inlet, Alaska, in 1990.

	Age Group					
	1.2	1.3	2.2	1.4	2.3	Total
Sample period <sup>a</sup> :	13 July - 16 August					
MALES	415	4,604	604	264	679	6,566
Percent	3.21	35.57	4.67	2.04	5.25	50.73
Sample Size	11	122	16	7	18	174
Mean Length(mm)	562	579	528	588	582	574
Std. Error	16.89	1.61	9.39	4.65	5.05	1.86
Mean Weight(kg)	3.36	3.49	2.59	3.79	3.59	3.42
Std. Error	0.29	0.04	0.16	0.12	0.10	0.04
FEMALES	528	4,377	755	189	528	6,377
Percent	4.08	33.82	5.83	1.46	4.08	49.27
Sample Size	14	116	20	5	14	169
Mean Length(mm)	493	549	489	575	547	538
Std. Error	9.59	1.91	6.89	2.01	5.70	1.80
Mean Weight(kg)	1.93	2.67	1.85	3.26	2.54	2.52
Std. Error	0.15	0.03	0.08	0.08	0.11	0.03
BOTH SEXES	943	8,981	1,359	453	1,207	12,943
Percent	7.29	69.39	10.50	3.50	9.33	100.00
Sample Size	25	238	36	12	32	343
Mean Length(mm)	523	564	506	583	566	556
Std. Error	9.17	1.24	5.66	2.84	3.78	1.30
Mean Weight(kg)	2.56	3.09	2.18	3.57	3.13	2.98
Std. Error	0.15	0.03	0.08	0.08	0.07	0.02

<sup>a</sup> Sample provided by CIAA personnel.

Table 26. Age, sex and length composition of sockeye salmon escapement in Susitna River (Sunshine Station), Upper Cook Inlet, Alaska, in 1990.

	Age Group									
	0.2	1.1	0.3	1.2	1.3	2.2	1.4	2.3	3.2	Total
<b>Sample Period 1: 12 - 24 July</b>										
<b>MALES</b>										
Percent			0.40		13.60		18.40		4.50	
Sample Size			2		69		93		23	
Mean Length(mm)			590		514		601		515	
Std. Error			20.00		5.80		4.68		10.59	
FEMALES										
Percent	0.20		1.00		16.30		34.60		2.60	
Sample Size	1		5		83		176		13	
Mean Length(mm)	525		557		478		561		482	
Std. Error			5.15		3.85		1.58		9.75	
BOTH SEXES										
Percent	0.20		1.40		29.90		53.00		7.10	
Sample Size	1		7		152		269		36	
Mean Length(mm)	525		566		494		575		503	
Std. Error			6.79		3.37		1.92		7.60	
<b>Sample Period 2: 25 July - 1 August</b>										
<b>MALES</b>										
Percent		0.20	0.20		12.10		19.70		1.50	
Sample Size		1	1		71		115		9	
Mean Length(mm)		425	590		509		592		482	
Std. Error					6.35		2.32		16.12	
FEMALES										
Percent	0.20			28.60		26.20		5.30		0.20
Sample Size	1			168		153		31		1
Mean Length(mm)		330			475		561		493	
Std. Error					2.64		1.85		4.81	
BOTH SEXES										
Percent	0.40	0.20	40.70		45.90		6.80	0.50	5.30	0.20
Sample Size	2	1	239		268		40	3	31	1
Mean Length(mm)		378	590		485		574		491	
Std. Error					2.65		1.45		5.17	
<i>- Continued -</i>										

Table 26. (p. 2 of 2)

	Age Group									Total
	0.2	1.1	0.3	1.2	1.3	2.2	1.4	2.3	3.2	
<b>All Periods Combined:</b>										
MALES										
Percent	0.10	0.30	12.85	19.05	3.00	0.15	2.95			38.40
Sample Size	1	3	140	208	32	2	32			418
Mean Length(mm)	425	590	511	596	507	618	590			560
Std. Error		20.00	4.29	2.56	8.91	7.50	4.69			2.07
FEMALES										
Percent	0.10	0.10	0.50	22.45	30.40	3.95	0.10	3.90	0.10	61.60
Sample Size	1	1	5	251	329	44	1	42	1	675
Mean Length(mm)	525	330	557	476	561	489	545	558	520	524
Std. Error			5.15	2.19	1.20	4.55		4.98		1.08
BOTH SEXES										
Percent	0.10	0.20	0.80	35.30	49.45	6.95	0.25	6.85	0.10	100.00
Sample Size	1	2	8	391	537	76	3	74	1	1,093
Mean Length(mm)	525	378	569	489	574	497	589	572	520	538
Std. Error			6.79	2.09	1.23	4.63	7.50	3.48		1.04

Table 27. Length composition of sockeye salmon in selected commercial gill net fisheries and escapements of Upper Cook Inlet, Alaska, in 1990.

Fishery	Age Group															Total	
	0.2	1.1	0.3	1.2	2.1	0.4	1.3	2.2	2.1	1.4	2.3	3.2	2.4	3.3	3.4		
<b>COMMERCIAL FISHERIES</b>																	
CENTRAL DISTRICT:																	
<u>Drift</u>																	
Mean Length(mm)	509.6		570.3	504.2	541.0	648.0	572.5	510.4		604.6	577.7	532.7	574.0	572.9		563.4	
Sample Size	6		62	618	1	1	3,937	563		37	2,041	10	17	7		7,300	
<u>Upper Subdistrict</u>																	
Cohoe/Ninilchik Beach																	
Mean Length(mm)	395.0	556.0	469.0				557.3	468.3		616.7	561.5	470.0	554.0			527.6	
Sample Size	1	3	466				940	532		7	682	1	2			2,634	
Kalifonsky Beach																	
Mean Length(mm)	455.7	487.4					565.5	498.9		606.1	573.1	502.5	578.3	605.0		555.5	
Sample Size	2	231					932	225		9	552	2	6	1		1,960	
Salamatof Beach																	
Mean Length(mm)	374.0	581.7	478.6	357.0			571.5	507.5		620.8	578.5	494.8	580.0		609.0	559.1	
Sample Size	1	3	211	2			1,052	203		16	572	5	11		1	2,077	
<u>Western Subdistrict</u>																	
Mean Length(mm)			483.0				555.8	498.0		551.3	560.4		564.0	556.0		550.8	
Sample Size			24				271	54		3	321		2	1		676	
NORTHERN DISTRICT:																	
<u>Eastern Subdistrict</u>																	
Mean Length(mm)	426.3	392.4	538.8	479.3	406.7		548.8	485.4		620.0	545.0	503.3		542.8		521.2	
Sample Size	4	9	11	322	3		590	173		1	178	7		6		1,304	
<u>General Subdistrict</u>																	
Mean Length(mm)	408.0		556.2	492.1			553.3	488.6		574.0	554.6		614.8			539.8	
Sample Size	1		9	128			618	59		4	133		2			954	

-Continued-

Table 27. (p. 2 of 3)

Fishery	Age Group															Total	
	0.2	1.1	0.3	1.2	2.1	0.4	1.3	2.2	2.1	1.4	2.3	3.2	2.4	3.3	3.4		
<b>ESCAPEMENT</b>																	
<b>CENTRAL DISTRICT</b>																	
Kenai River																	
Mean Length(mm)	376.3	548.4	475.8	377.2			573.8	495.0		610.2	580.1	487.3	615.4			541.5	
Sample Size	8	4	295	4			676	201		10	309	3	3			1,513	
Hidden Creek																	
Mean Length(mm)			506.8	534.0			565.3	515.6			605.0					508.9	
Sample Size			616	1			11	84			1					713	
Kasilof River																	
Mean Length(mm)	340.0	471.0	460.4				520.8	455.4		567.2	521.8	420.0				478.6	
Sample Size	2	1	230				187	215		2	124	1				762	
Crescent River																	
Mean Length(mm)		600.0	540.5	340.0			583.5	518.6		600.0	591.7		630.0			582.6	
Sample Size		2	24	1			304	20		2	237		1			591	
<u>Kalgin Island Subdistrict</u>																	
Packers Creek																	
Mean Length(mm)	328.3		466.1	471.9			549.9	480.4			546.1		590.0	425.0		500.2	
Sample Size	3		100	8			237	378			67		1	1		795	
<b>NORTHERN DISTRICT</b>																	
Fish Creek																	
Mean Length(mm)	374.0		504.9	370.7			543.0	488.6	390.0		539.7					512.5	
Sample Size	3		160	3			132	105	1		25					429	
Yentna River																	
Mean Length(mm)	443.7	324.2	554.9	446.2	888.6		561.1	458.7		580.2	555.2	478.2	520.0			514.7	
Sample Size	15	5	50	543	2		926	191		11	169	3	1			1,916	
Chelatna Lake																	
Mean Length(mm)	578.3		600.3	551.8			580.5									569.6	
Sample Size	3		3	17			68									91	

-Continued-

Table 27. (p. 3 of 3)

Fishery	Age Group															Total
	0.2	1.1	0.3	1.2	2.1	0.4	1.3	2.2	2.1	1.4	2.3	3.2	2.4	3.3	3.4	
<b>NORTHERN DISTRICT: (continued)</b>																
Hewitt Creek																
Mean Length(mm)			523.2				564.4	506.3		582.7	566.4					556.1
Sample Size			25				238	36		12	32					343
Susitna River																
Mean Length(mm)	525.0	377.5	569.4	488.7			574.5	497.0		588.5	572.0	520.0				538.1
Sample Size	1	2	8	391			537	75		3	74	1				1,092
<b>Upper Cook Inlet Total</b>																
Mean Length(mm)	497.6	368.5	567.2	486.7	406.6	648.0	569.6	494.1	390.0	606.3	575.4	503.8	582.3	572.9	609.0	551.3
Sample Size	30	34	158	4,401	25	1	11,656	3,114	1	117	5,517	33	46	16	1	25,150

Table 28. Age and length composition of coho salmon in selected commercial gill net fisheries,  
Upper Cook Inlet, Alaska, in 1990.

Fishery	Age Group					Total	
	1.1	2.1	3.1	1.2	2.2		
<b>Central District:</b>							
<b>Drift</b>							
Number	39,290	192,066	13,528	70	269	245,223	
Percent	16.02	78.32	5.52	.03	.11	100.00	
Sample Size	263	1,288	105	1	3	1,660	
Mean Length(mm)	538	552	567	559	523	550	
Sample Size	263	1,288	105	1	3	1,660	
<b>Upper Subdistrict</b>							
Number	7,393	31,290	1,632		36	40,351	
Percent	18.32	77.54	4.04		.09	100.00	
Sample Size	208	880	46		1	1,135	
Mean Length(mm)	533	554	562		487	551	
Sample Size	208	880	46		1	1,135	
<b>Western Subdistrict</b>							
Number	3,362	18,166	976	271	434	23,209	
Percent	14.49	78.27	4.21	1.17	1.87	100.00	
Sample Size	62	335	18	5	8	428	
Mean Length(mm)	532	548	521	513	537	544	
Sample Size	62	334	18	5	8	427	
<b>Northern District:</b>							
<b>General Subdistrict</b>							
Number	13,300	87,933	4,444	484	1,139	107,300	
Percent	12.40	81.95	4.14	.45	1.06	100.00	
Sample Size	81	537	27	3	7	655	
Mean Length(mm)	538	557	549	520	529	554	
Sample Size	81	536	27	3	7	654	
<b>Fish Creek</b>							
Number	315	2,138	206		14	2,673	
Percent	11.78	79.99	7.71		.52	100.00	
Sample Size	23	156	15		1	195	
Mean Length(mm)	497	517	571		451	518	
Sample Size	23	156	15		1	195	
<b>Total</b>							
Number	63,660	331,593	20,786	825	1,892	418,756	
Percent	15.20	79.19	4.96	.20	.45	100.00	
Sample Size	637	3,196	211	9	20	4,073	
Mean Length(mm)	537	553	561	521	528	551	
Sample Size	637	3,194	211	9	20	4,071	

Table 29. Age, sex and length composition of coho salmon harvested in the Central District commercial drift gill net fishery, Upper Cook Inlet, Alaska, in 1990.

	Age Group					
	1.1	2.1	3.1	1.2	2.2	Total
<b>Sample Period<sup>a</sup> 1: 25 June - 16 July</b>						
Males	2,679	13,182	1,762	70		17,693
Percent	8.21	40.39	5.40	0.21		54.21
Mean Length(mm)	538	544	552	559		544
Std. Error	6.75	3.35	8.80			2.84
Sample Size	38	187	25	1		251
Females	1,480	11,771	1,692			14,943
Percent	4.53	36.07	5.18			45.79
Mean Length(mm)	523	537	566			539
Std. Error	8.48	3.44	8.08			2.98
Sample Size	21	167	24			212
Both Sexes	4,159	24,953	3,454	70		32,636
Percent	12.74	76.46	10.58	0.21		100.00
Mean Length(mm)	532	541	559	559		542
Std. Error	5.29	2.40	5.98			2.06
Sample Size	59	354	49	1		463
<b>Sample Period 2: 17 July - 2 August</b>						
Males	10,214	63,687	5,107			79,008
Percent	6.80	42.40	3.40			52.60
Mean Length(mm)	536	558	575			556
Std. Error	7.15	2.39	8.00			2.20
Sample Size	34	212	17			263
Females	13,819	55,275	2,103			71,197
Percent	9.20	36.80	1.40			47.40
Mean Length(mm)	531	542	543			540
Std. Error	6.42	2.78	27.19			2.62
Sample Size	46	184	7			237
Both Sexes	24,033	118,962	7,210			150,205
Percent	16.00	79.20	4.80			100.00
Mean Length(mm)	533	550	565			548
Std. Error	4.78	1.82	9.74			1.70
Sample Size	80	396	24			500

-Continued-

Table 29. (p. 2 of 2)

	Age Group					
	1.1	2.1	3.1	1.2	2.2	Total
<b>Sample Period 3: 3 August - 7 September</b>						
Males	5,012	23,807	1,432		179	30,430
Percent	8.03	38.16	2.30		0.29	48.78
Mean Length(mm)	550	558	583		552	558
Std. Error	5.61	2.59	9.93		21.00	2.28
Sample Size	56	266	16		2	340
Females	6,086	24,344	1,432		90	31,952
Percent	9.76	39.02	2.30		0.14	51.22
Mean Length(mm)	550	562	580		464	561
Std. Error	4.03	2.03	8.09			1.76
Sample Size	68	272	16		1	357
Both Sexes	11,098	48,151	2,864		269	62,382
Percent	17.79	77.19	4.59		0.43	100.00
Mean Length(mm)	550	560	582		523	559
Std. Error	3.36	1.64	6.40		21.00	1.43
Sample Size	124	538	32		3	697
<b>All Periods Combined<sup>b</sup>:</b>						
Males	17,905	100,676	8,301	70	179	127,131
Percent	7.30	41.05	3.39	0.03	0.07	51.84
Mean Length(mm)	540	556	571	559	552	555
Std. Error	4.48	1.69	5.53		21.00	1.52
Sample Size	128	665	58	1	2	854
Females	21,385	91,390	5,227		90	118,092
Percent	8.72	37.27	2.13		0.04	48.16
Mean Length(mm)	536	547	561		464	545
Std. Error	4.34	1.82	11.46			1.69
Sample Size	135	623	47		1	806
Both Sexes	39,290	192,066	13,528	70	269	245,223
Percent	16.02	78.32	5.52	0.03	0.11	100.00
Mean Length(mm)	538	552	567	559	523	550
Std. Error	3.12	1.24	5.58		21.00	1.13
Sample Size	263	1,288	105	1	3	1,660

<sup>a</sup> Sample periods 25 June - 16 July and 3 August - 7 September were district-wide openings.

Sample period 17 July - 2 August represented corridor openings with some restrictions.

<sup>b</sup> Commercial catch excludes Chinitna Bay Subdistrict.

Table 30. Age, sex and length composition of coho salmon harvested in the Upper Subdistrict commercial set gill net fishery, Upper Cook Inlet, Alaska, in 1990.

	Age Group			
	1.1	2.1	3.1	Total
<b>Sample Period 1: 2 - 31 July</b>				
Males	1,697	8,273	460	10,430
Percent	8.84	43.09	2.40	54.33
Mean Length(mm)	530	551	585	549
Std. Error	5.41	2.81	9.81	2.43
Sample Size	48	234	13	295
Females	1,980	6,117	672	8,769
Percent	10.31	31.86	3.50	45.67
Mean Length(mm)	531	544	547	542
Std. Error	5.01	3.08	11.95	2.59
Sample Size	56	173	19	248
Both Sexes	3,677	14,390	1,132	19,199
Percent	19.15	74.95	5.90	100.00
Mean Length(mm)	531	548	563	546
Std. Error	3.67	2.08	8.13	1.78
Sample Size	104	407	32	543
<b>Sample Period 2: 1 - 15 August</b>				
Males	1,965	9,218	286	11,505
Percent	9.29	43.58	1.35	54.39
Mean Length(mm)	543	562	555	559
Std. Error	6.06	2.98	14.95	2.63
Sample Size	55	258	8	322
Females	1,751	7,682	214	9,647
Percent	8.28	36.32	1.01	45.61
Mean Length(mm)	527	557	568	552
Std. Error	5.97	3.03	8.27	2.65
Sample Size	49	215	6	270

-Continued-

Table 30. (p. 2 of 2)

	Age Group				
	1.1	2.1	3.1	2.2	Total
<b>Sample Period 2: 1 - 15 August (continued)</b>					
Both Sexes	3,716	16,900	500	36	21,152
Percent	17.57	79.90	2.36	0.17	100.00
Mean Length(mm)	536	560	561	487	555
Std. Error	4.26	2.13	9.25		1.87
Sample Size	104	473	14	1	592
<b>All Periods Combined:</b>					
Males	3,662	17,491	746	36	21,935
Percent	9.08	43.35	1.85	0.09	54.36
Sample Size	103	492	21	1	617
Mean Length(mm)	537	557	573	487	554
Std. Error	4.10	2.06	8.33		1.80
Sample Size	103	492	21	1	617
Females	3,731	13,799	886		18,416
Percent	9.25	34.20	2.20		45.64
Sample Size	105	388	25		518
Mean Length(mm)	530	551	552		547
Std. Error	3.86	2.17	9.28		1.86
Sample Size	105	388	25		518
Both Sexes	7,393	31,290	1,632	36	40,351
Percent	18.32	77.54	4.04	0.09	100.00
Sample Size	208	880	46	1	1,135
Mean Length(mm)	533	554	562	487	551
Std. Error	2.82	1.50	6.31		1.29
Sample Size	208	880	46	1	1,135

Table 31. Age, sex and length composition of coho salmon harvested in the Western Subdistrict commercial set gill net fishery, Upper Cook Inlet, Alaska, in 1990.

	Age Group					
	1.1	2.1	3.1	1.2	2.2	Total
Sample period:	29 June - 10 September					
Males	2,006	10,033	596	108	271	13,014
Percent	8.64	43.23	2.57	0.47	1.17	56.07
Mean Length(mm)	526	547	517	494	565	542
Std. Error	7.29	2.83	12.36	63.50	23.66	2.62
Sample Size	37	184	11	2	5	239
Females	1,356	8,133	380	163	163	10,195
Percent	5.84	35.04	1.64	0.70	0.70	43.93
Mean Length(mm)	542	549	529	526	489	546
Std. Error	6.55	4.11	14.91	37.00	6.35	3.49
Sample Size	25	150	7	3	3	188
Both Sexes	3,362	18,166	976	271	434	23,209
Percent	14.49	78.27	4.21	1.17	1.87	100.00
Mean Length(mm)	532	548	521	513	537	544
Std. Error	5.09	2.41	9.52	33.70	14.97	2.12
Sample Size	62	334	18	5	8	427

Table 32. Age, sex and length composition of coho salmon harvested in the General Subdistrict commercial set gill net fishery, Upper Cook Inlet, Alaska, in 1990.

	Age Group					
	1.1	2.1	3.1	1.2	2.2	Total
<b>Sample Period 1: 4 June - 31 July</b>						
Males	4,803	26,241	2,230	172	515	33,961
Percent	8.43	46.08	3.92	0.30	0.90	59.64
Mean Length(mm)	543	561	554	557	546	558
Std. Error	7.11	2.83	11.64		24.66	2.55
Sample Size	28	153	13	1	3	198
Females	2,573	20,068	343			22,984
Percent	4.52	35.24	0.60			40.36
Mean Length(mm)	532	547	541			546
Std. Error	10.55	2.79	29.50			2.74
Sample Size	15	117	2			134
Both Sexes	7,376	46,309	2,573	172	515	56,945
Percent	12.95	81.32	4.52	0.30	0.90	100.00
Mean Length(mm)	539	555	552	557	546	553
Std. Error	5.92	2.01	10.83		24.66	1.88
Sample Size	43	270	15	1	3	332
<b>Sample Period 2: 1 August - 14 September</b>						
Males	3,586	23,384	1,247	156	468	28,841
Percent	7.12	46.44	2.48	0.31	0.93	57.28
Mean Length(mm)	546	562	538	503	534	558
Std. Error	6.90	3.19	17.07		17.01	2.84
Sample Size	23	150	8	1	3	185
Females	2,338	18,240	624	156	156	21,514
Percent	4.64	36.22	1.24	0.31	0.31	42.72
Mean Length(mm)	523	554	559	496	454	550
Std. Error	13.91	2.86	22.17			2.93
Sample Size	15	116	4	1	1	137
Both Sexes	5,924	41,624	1,871	312	624	50,355
Percent	11.76	82.66	3.72	0.62	1.24	100.00
Mean Length(mm)	537	559	545	500	514	555
Std. Error	6.90	2.19	13.57		17.01	2.05
Sample Size	38	266	12	2	4	322

-Continued-

Table 32. (p. 2 of 2)

	Age Group					
	1.1	2.1	3.1	1.2	2.2	Total
<b>All Periods Combined:</b>						
Males	8,389	49,625	3,477	328	983	62,802
Percent	7.82	46.25	3.24	0.31	0.92	58.53
Mean Length(mm)	545	562	548	531	540	558
Std. Error	5.03	2.12	9.65		15.25	1.90
Sample Size	51	303	21	2	6	383
Females	4,911	38,308	967	156	156	44,498
Percent	4.58	35.70	0.90	0.15	0.15	41.47
Mean Length(mm)	528	550	553	496	454	547
Std. Error	8.63	2.00	17.72			2.00
Sample Size	30	233	6	1	1	271
Both Sexes	13,300	87,933	4,444	484	1,139	107,300
Percent	12.40	81.95	4.14	0.45	1.06	100.00
Mean Length(mm)	538	557	549	520	529	554
Std. Error	4.49	1.48	8.48		15.25	1.39
Sample Size	81	536	27	3	7	654

Table 33. Age, sex and size composition of coho salmon escapement in Fish Creek, Upper Cook Inlet, Alaska, in 1990.

	Age Group				
	1.1	2.1	3.1	2.2	Total
Sample period:	21 July - 15 September				
Males	151	1,041	55	14	1,261
Percent	5.65	38.95	2.06	0.52	47.18
Sample Size	11	76	4	1	92
Mean Length(mm)	480	492	582	451	494
Std. Error	11.68	5.92	19.27		5.16
Sample Size	11	76	4	1	92
Mean Weight(kg)	1.59	1.80	3.01	1.45	1.82
Std. Error	0.11	0.07	0.44		0.06
Sample Size	11	76	4	1	92
Females	164	1,097	151		1,412
Percent	6.14	41.04	5.65		52.82
Sample Size	12	80	11		103
Mean Length(mm)	513	540	567		540
Std. Error	12.31	4.75	9.55		4.09
Sample Size	12	80	11		103
Mean Weight(kg)	1.95	2.31	2.74		2.31
Std. Error	0.19	0.07	0.13		0.06
Sample Size	12	80	11		103
Both Sexes	315	2,138	206	14	2,673
Percent	11.78	79.99	7.71	0.52	100.00
Sample Size	23	156	15	1	195
Mean Length(mm)	497	517	571	451	518
Std. Error	8.51	3.78	8.69		3.25
Sample Size	23	156	15	1	195
Mean Weight(kg)	1.78	2.06	2.81	1.45	2.08
Std. Error	0.11	0.05	0.15		0.04
Sample Size	23	156	15	1	195

Table 34. Age, sex and length composition of chum salmon harvested in the Central District commercial drift gill net fishery, Upper Cook Inlet, Alaska, in 1990.

	Age Group				
	0.2	0.3	0.4	0.5	Total
<b>Sample Period<sup>a</sup> 1: 25 June - 16 July</b>					
Males	208	35,694	22,413	1,245	59,560
Percent	0.16	27.34	17.17	0.95	45.63
Mean Length(mm)	576	584	607	609	593
Std. Error		3.51	3.28	8.48	2.45
Sample Size	1	172	108	6	287
Females		38,807	30,091	2,075	70,973
Percent		29.73	23.05	1.59	54.37
Mean Length(mm)		578	603	623	590
Std. Error		1.96	2.92	8.31	1.66
Sample Size		187	145	10	342
Both Sexes	208	74,501	52,504	3,320	130,533
Percent	0.16	57.07	40.22	2.54	100.00
Mean Length(mm)	576	581	605	618	591
Std. Error		1.97	2.18	6.09	1.43
Sample Size	1	359	253	16	629
<b>Sample Period 2: 17 July - 2 August</b>					
Males	4,156	57,448	4,523		66,127
Percent	3.15	43.48	3.42		50.05
Mean Length(mm)	540	562	589		563
Std. Error	5.45	1.45	4.62		1.34
Sample Size	34	470	37		541
Females	2,322	57,081	6,234	367	66,004
Percent	1.76	43.20	4.72	0.28	49.95
Mean Length(mm)	539	557	584	550	559
Std. Error	8.33	1.22	4.68	20.54	1.19
Sample Size	19	467	51	3	540
Both Sexes	6,478	114,529	10,757	367	132,131
Percent	4.90	86.68	8.14	0.28	100.00
Mean Length(mm)	540	560	586	550	561
Std. Error	4.60	0.95	3.34	20.54	0.90
Sample Size	53	937	88	3	1,081

-Continued-

Table 34. (p. 2 of 2)

	Age Group				
	0.2	0.3	0.4	0.5	Total
<b>Sample Period 3: 3 August - 7 September</b>					
Males	1,530	11,789	540		13,859
Percent	5.74	44.26	2.03		52.03
Mean Length(mm)	532	544	572		544
Std. Error	5.04	2.33	6.41		2.08
Sample Size	17	131	6		154
Females	1,260	10,619	900		12,779
Percent	4.73	39.86	3.38		47.97
Mean Length(mm)	535	548	579		549
Std. Error	6.92	2.01	11.10		1.97
Sample Size	14	118	10		142
Both Sexes	2,790	22,408	1,440		26,638
Percent	10.47	84.12	5.41		100.00
Mean Length(mm)	534	546	576		546
Std. Error	4.17	1.55	7.34		1.43
Sample Size	31	249	16		296
<b>All Periods Combined<sup>b</sup>:</b>					
Males	5,894	104,931	27,476	1,245	139,546
Percent	2.04	36.27	9.50	0.43	48.24
Mean Length(mm)	540	568	603	609	574
Std. Error	4.21	1.46	2.78	8.48	1.24
Sample Size	52	773	151	6	982
Females	3,582	106,507	37,225	2,442	149,756
Percent	1.24	36.82	12.87	0.84	51.76
Mean Length(mm)	537	564	599	612	573
Std. Error	5.93	0.99	2.50	7.70	0.96
Sample Size	33	772	206	13	1,024
Both Sexes	9,476	211,438	64,701	3,687	289,302
Percent	3.28	73.09	22.36	1.27	100.00
Mean Length(mm)	539	566	601	611	573
Std. Error	3.45	0.88	1.86	5.85	0.78
Sample Size	85	1,545	357	19	2,006

<sup>a</sup> Sample periods 25 June - 16 July and 3 August - 7 September were district-wide openings. Sample period 17 July - 2 August represented corridor openings with some restrictions.

<sup>b</sup> Commercial catch excludes Chinitna Bay Subdistrict.

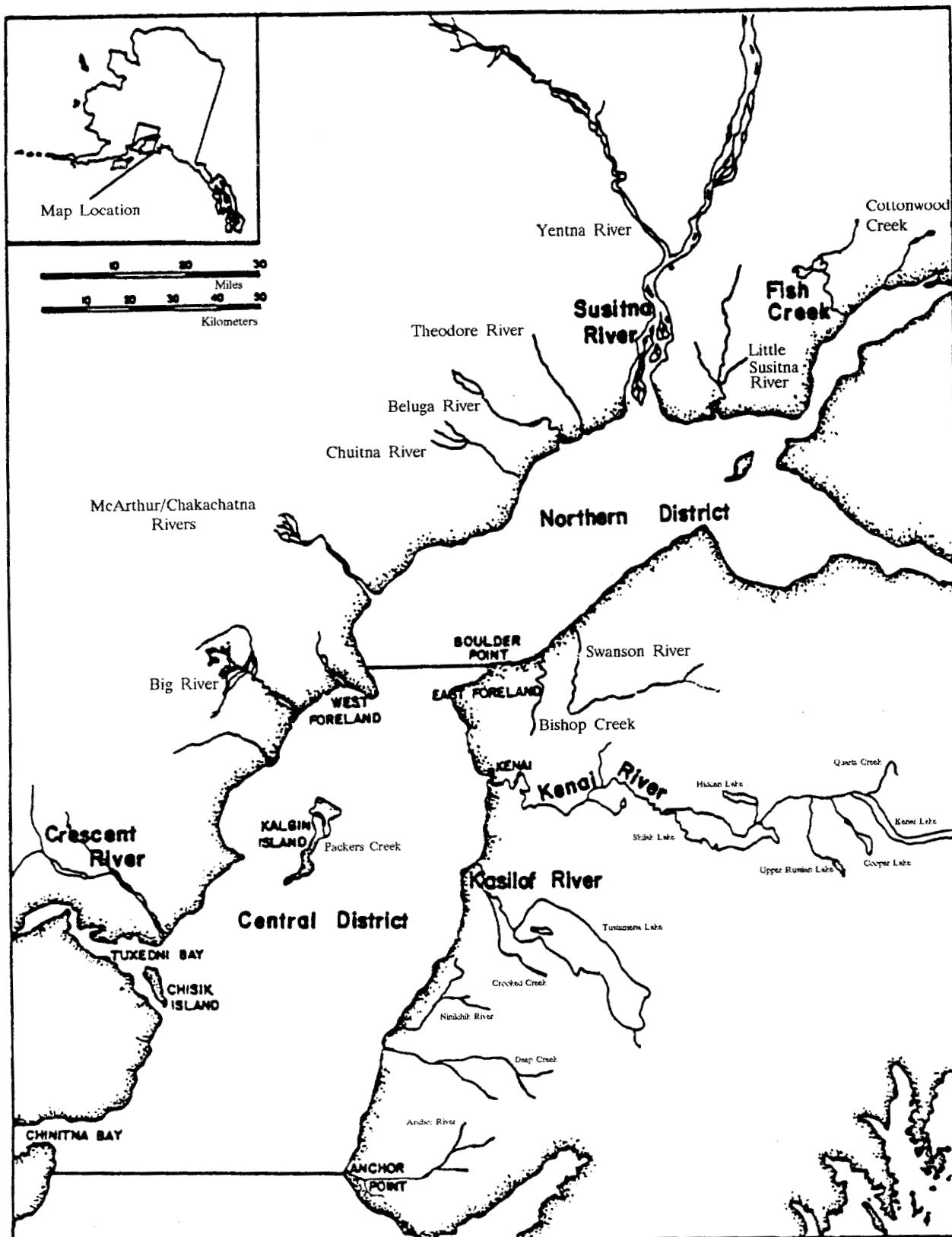


Figure 1. Map of Upper Cook Inlet showing locations of the Northern and Central Districts and the primary salmon spawning drainages.

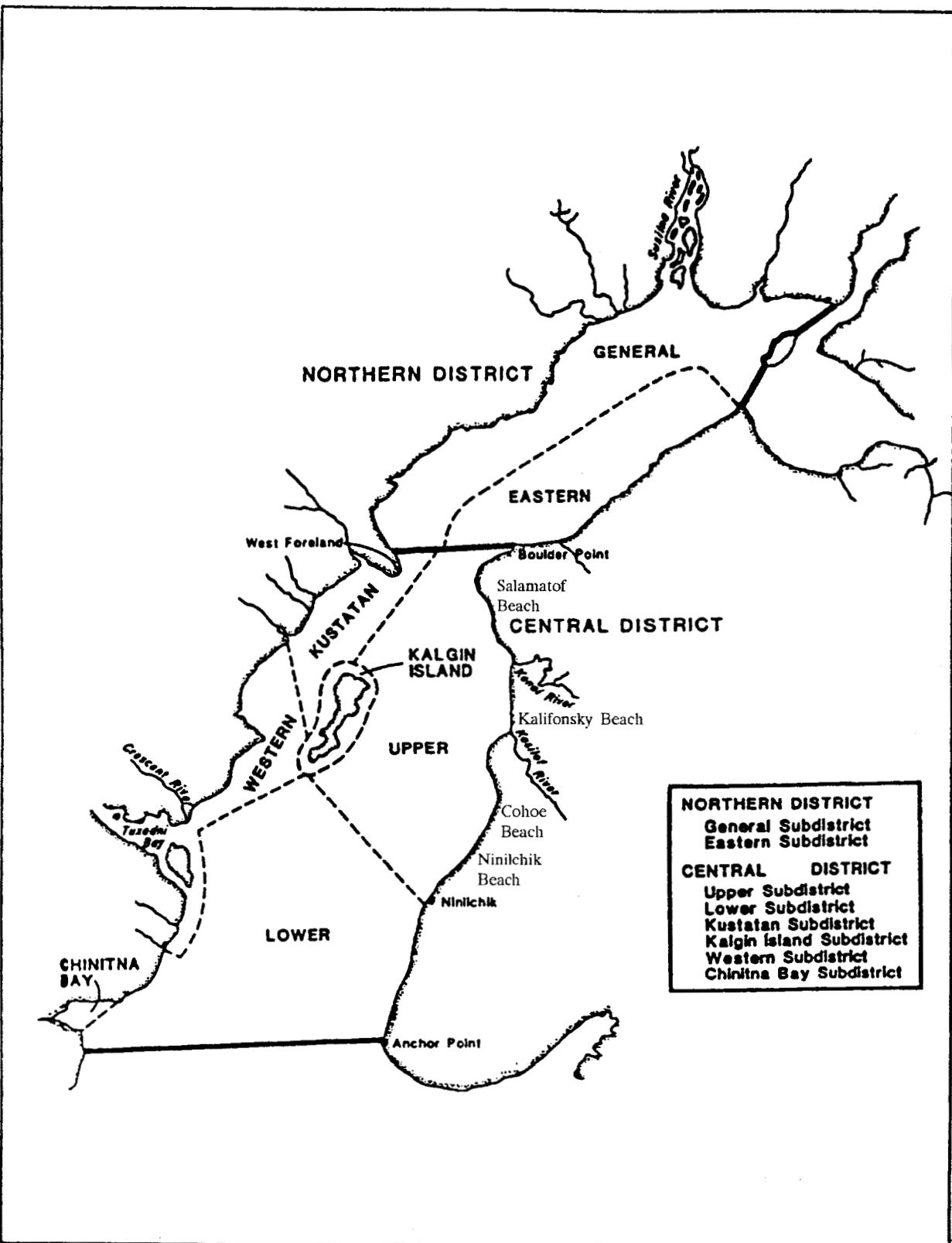


Figure 2. Map of Upper Cook Inlet showing the commercial fishing districts, subdistricts and east side beaches.

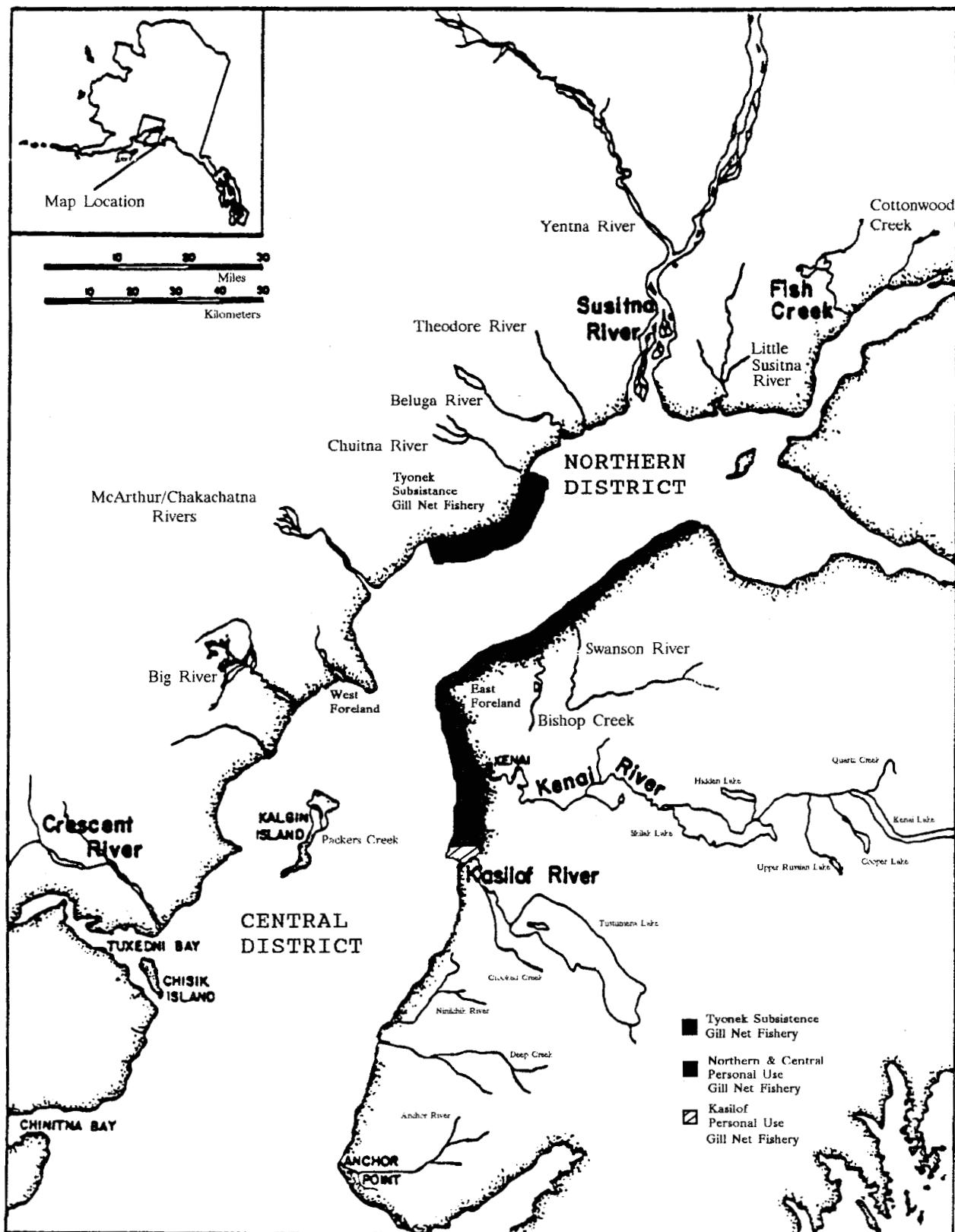


Figure 3. Map of Upper Cook Inlet showing locations of the subsistence and personal use fisheries.

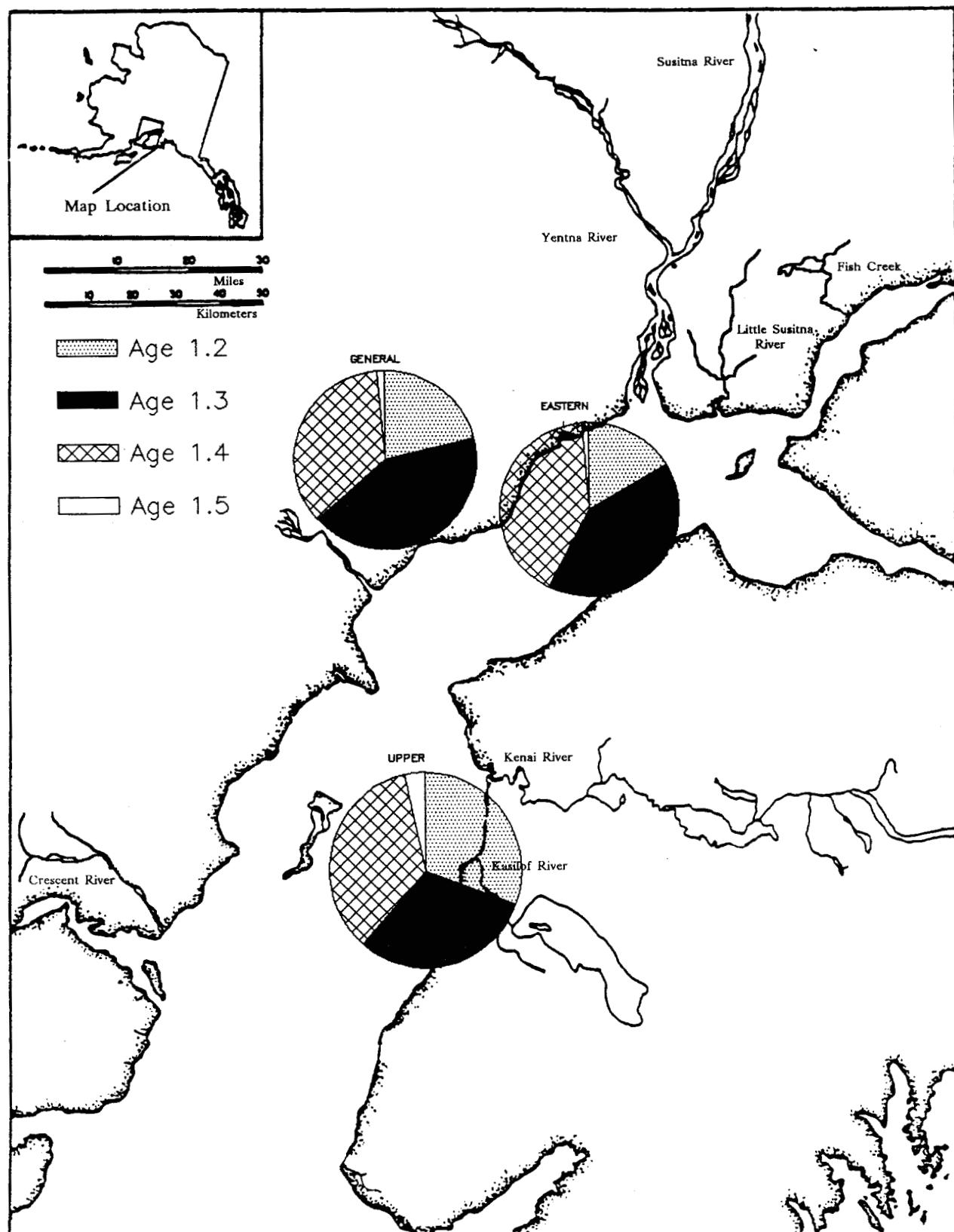


Figure 4. Chinook salmon age composition in several commercial set gill net fisheries of Upper Cook Inlet, Alaska, in 1990.

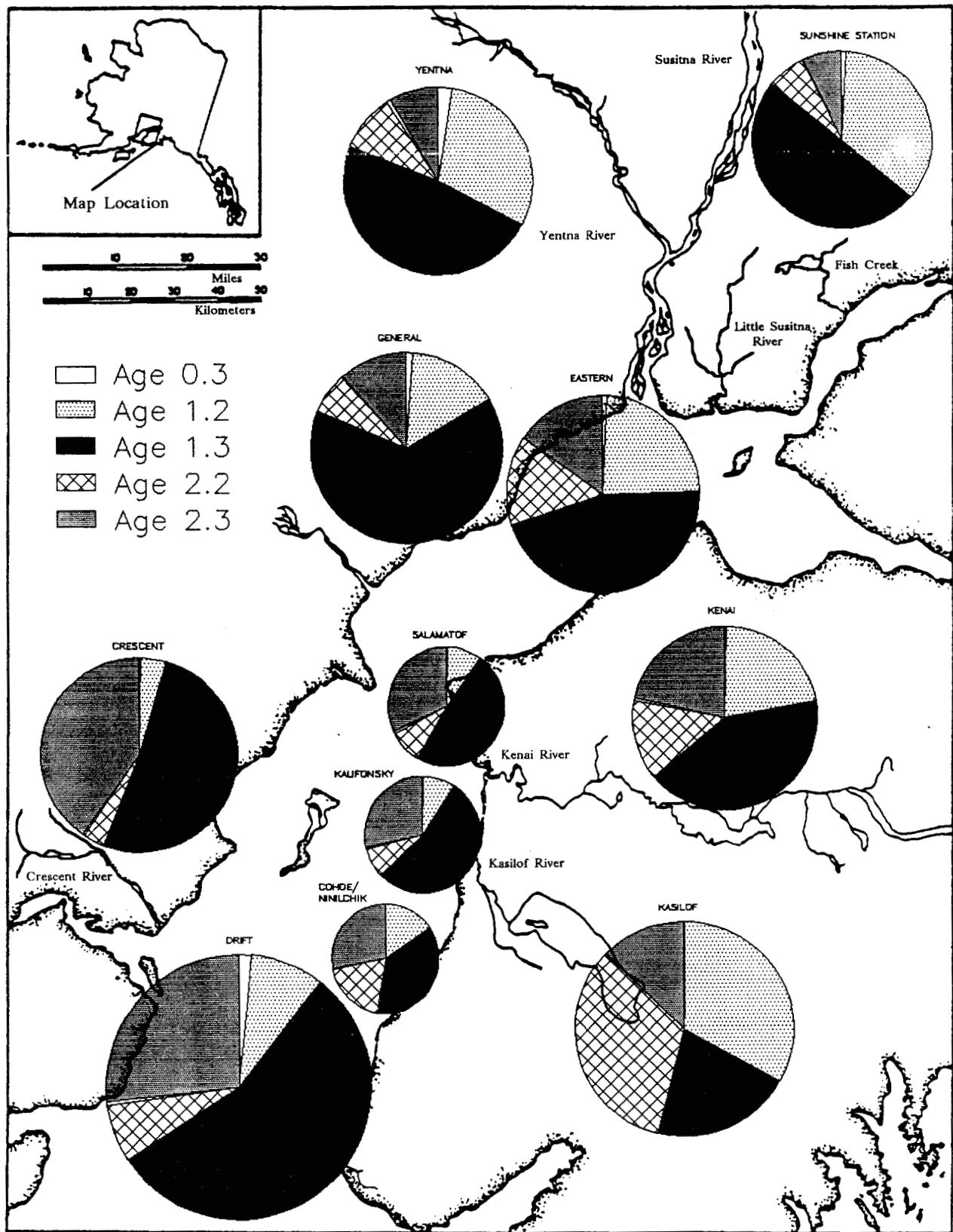


Figure 5. Sockeye salmon age composition in commercial fisheries and escapements of Upper Cook Inlet, Alaska, in 1990.

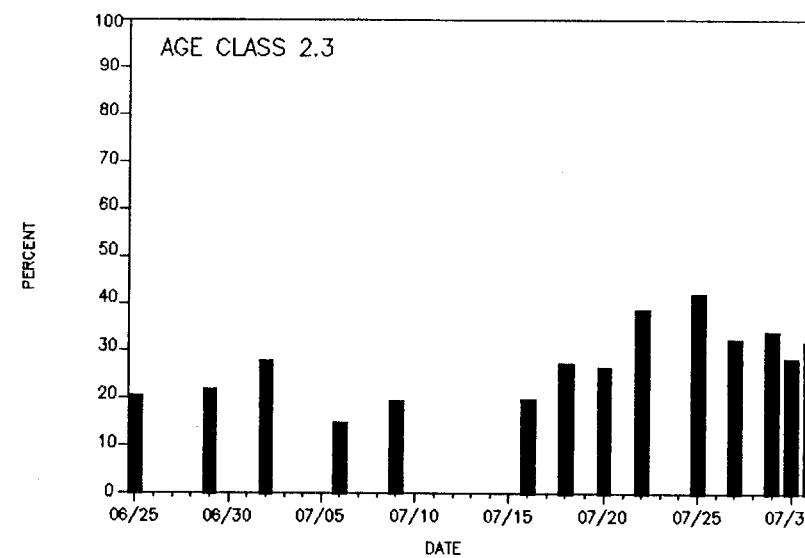
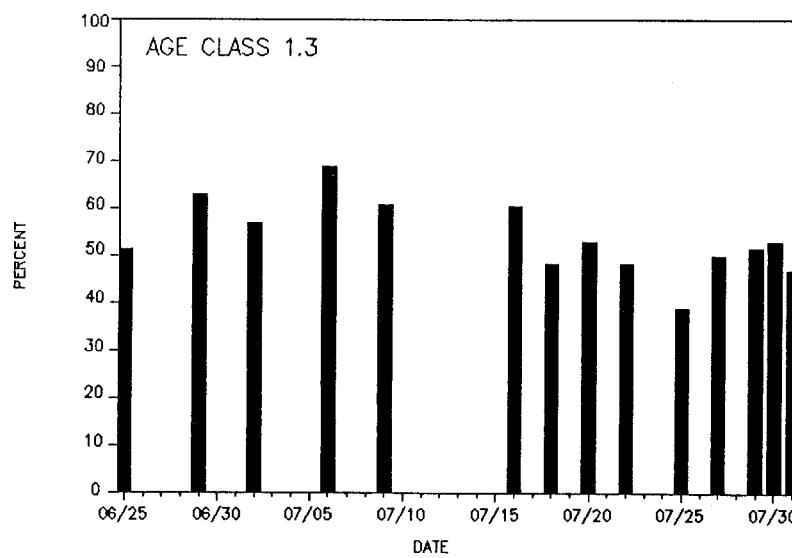
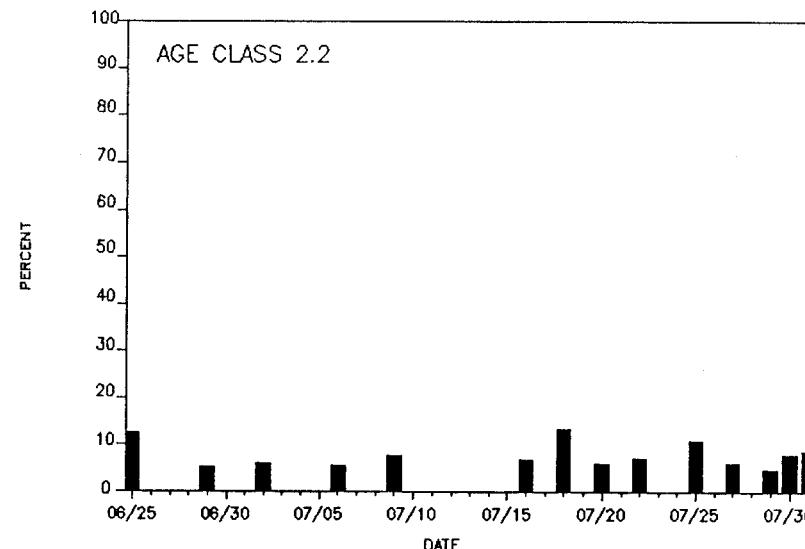
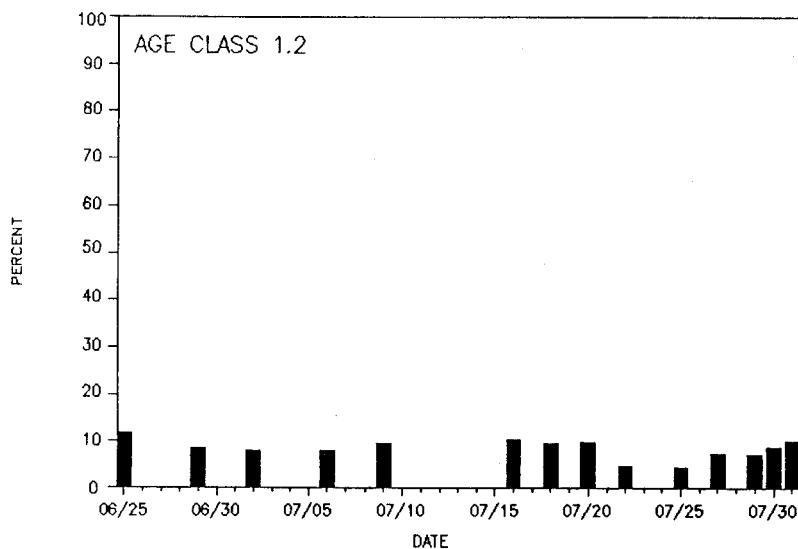


Figure 6. Sockeye salmon age class composition in the Central District drift gill net fishery of Upper Cook Inlet, Alaska, in 1990.

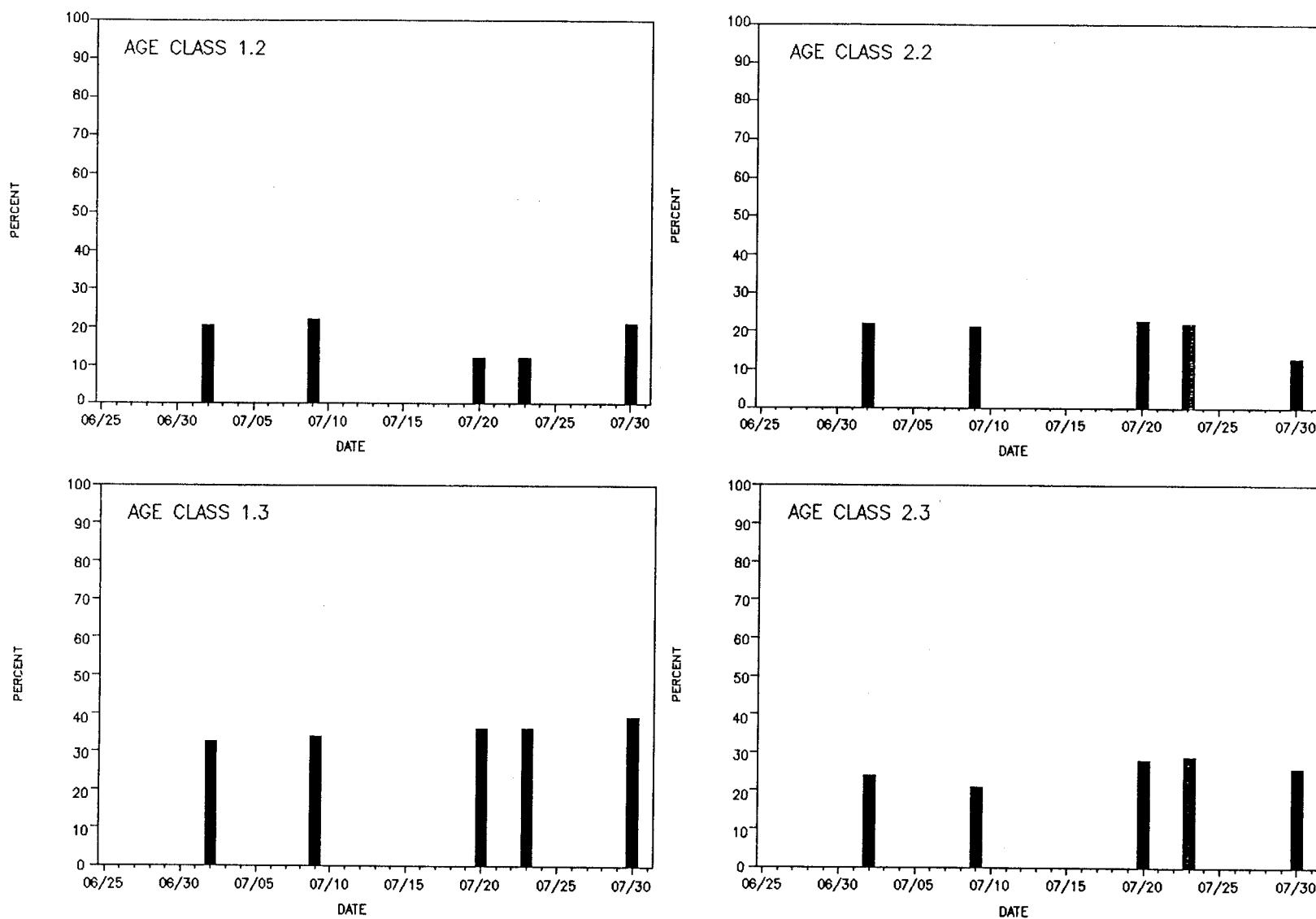


Figure 7. Sockeye salmon age class composition in the Cohoe/Ninilchik Beach set gill net fishery of Upper Cook Inlet, Alaska, in 1990.

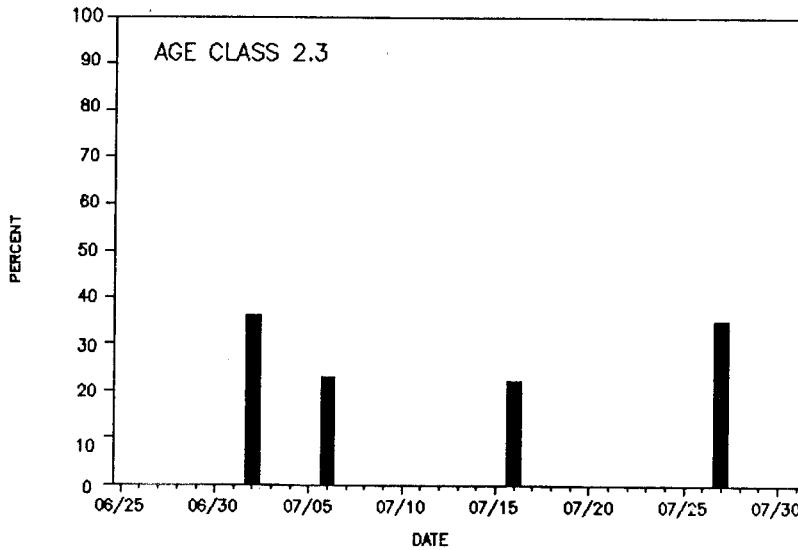
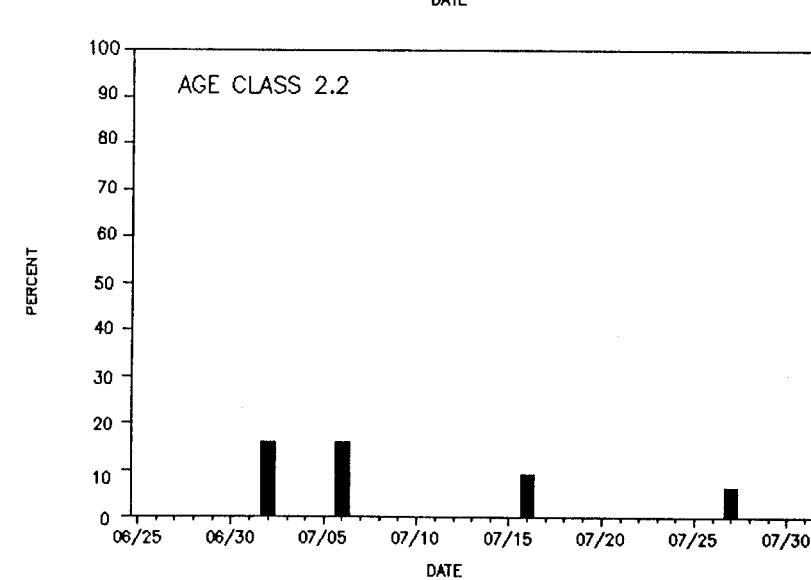
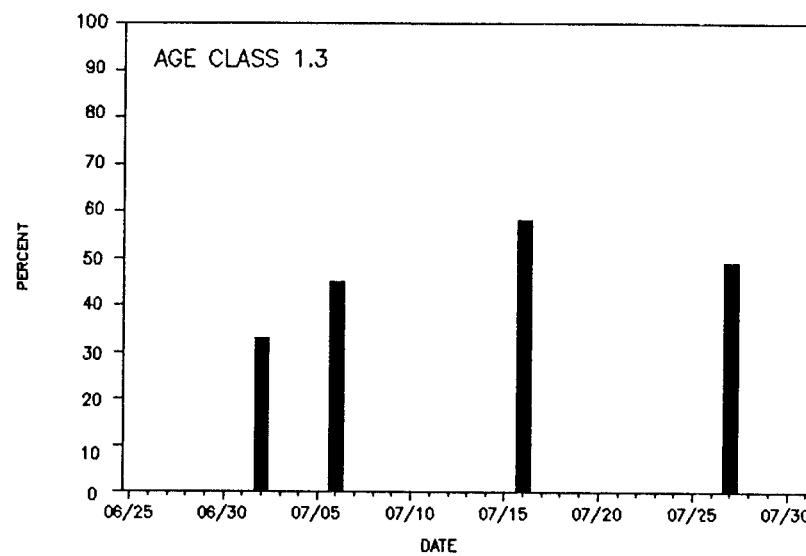
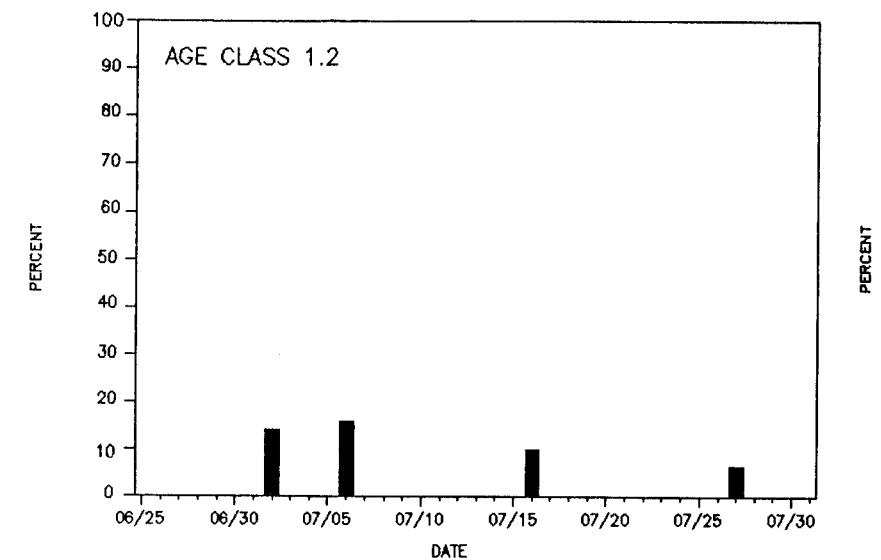


Figure 8. Sockeye salmon age class composition in the Kalifonsky Beach set gill net fishery of Upper Cook Inlet, Alaska, in 1990.

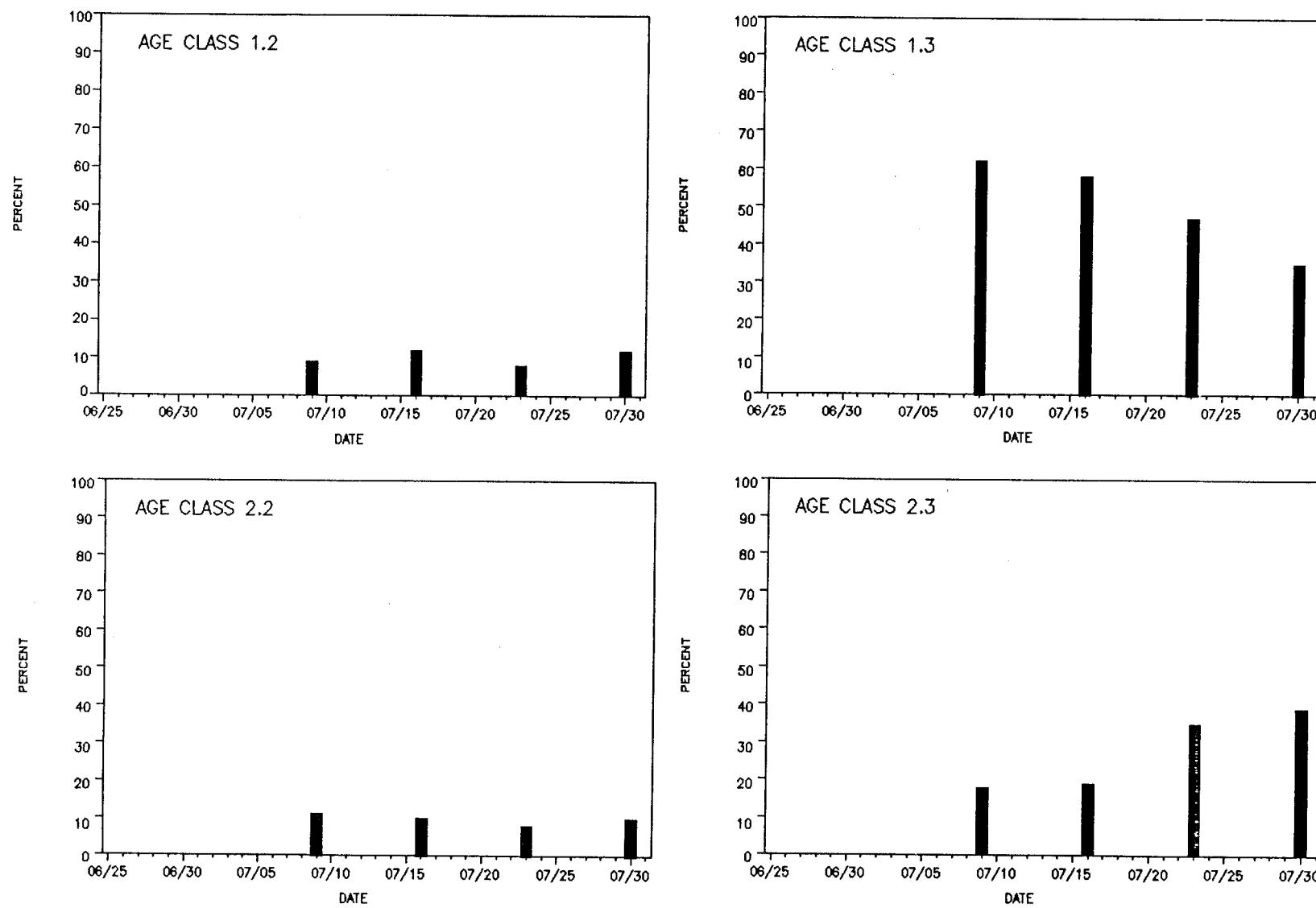


Figure 9. Sockeye salmon age class composition in the Salamatof Beach set gill net fishery of Upper Cook Inlet, Alaska, in 1990.

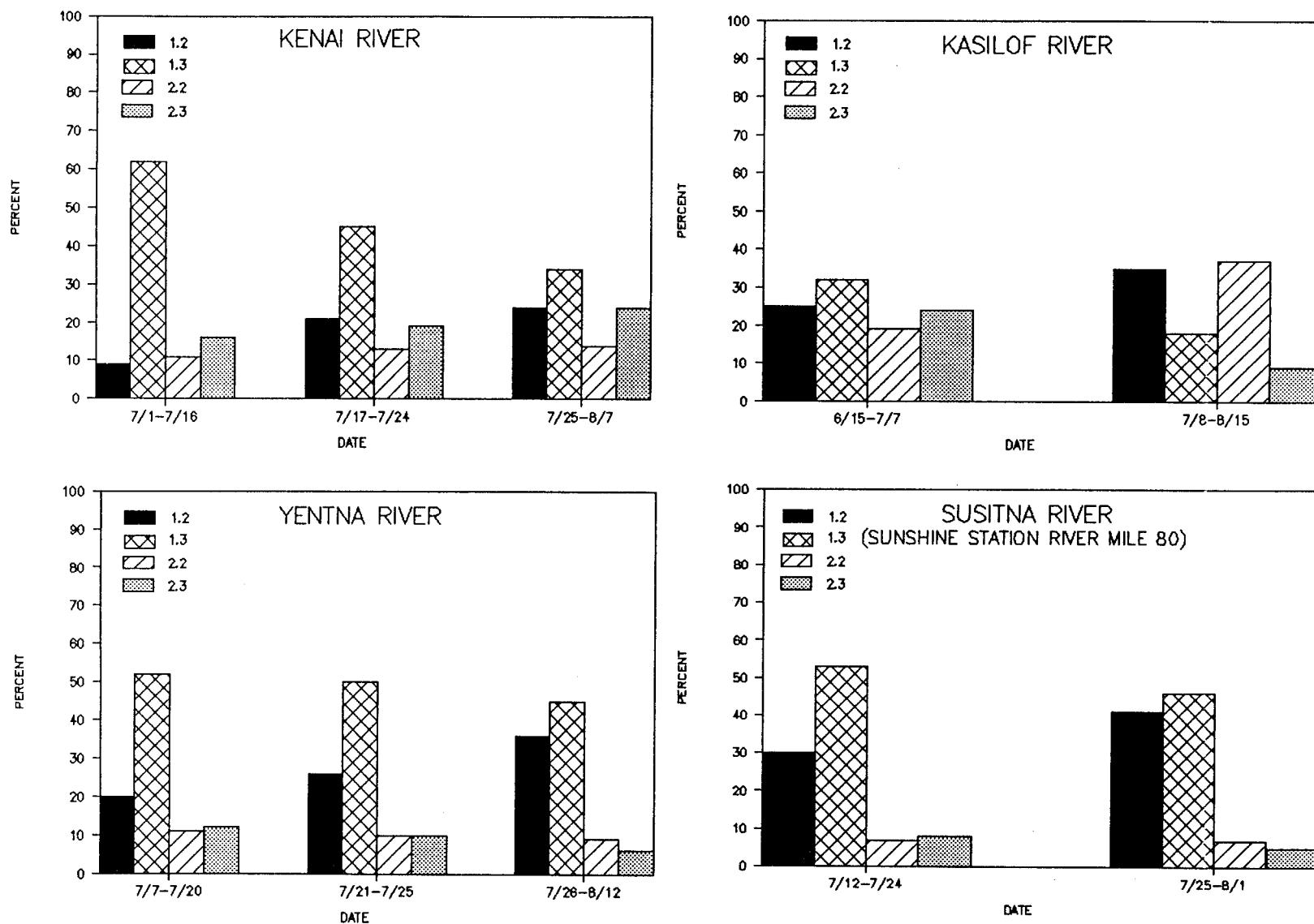


Figure 10. Sockeye salmon age class composition in the Kenai, Kasilof, Yentna, and Susitna Rivers of Upper Cook Inlet, Alaska, in 1990.

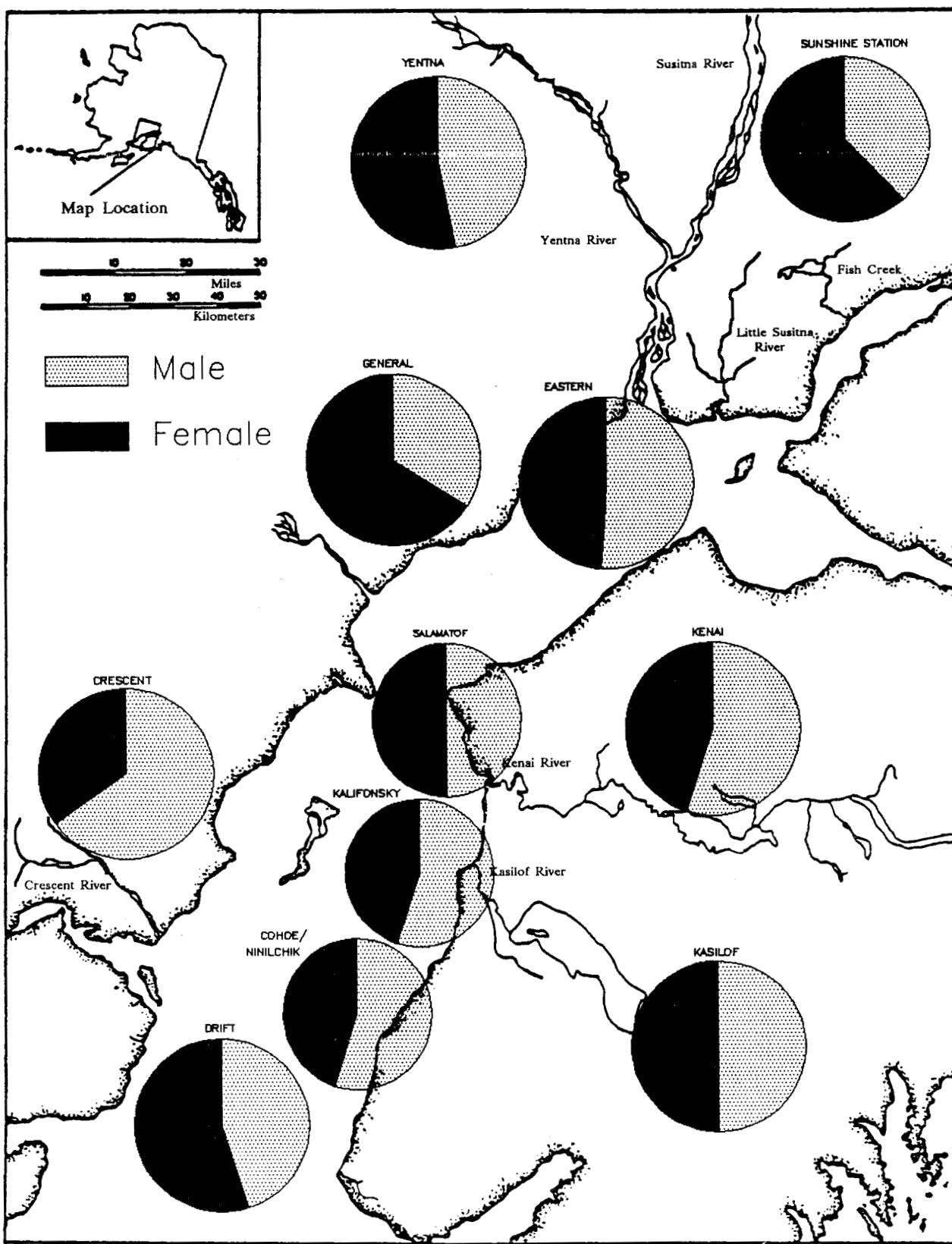


Figure 11. Sockeye salmon sex composition in the commercial fisheries and escapements of Upper Cook Inlet, Alaska, in 1990.

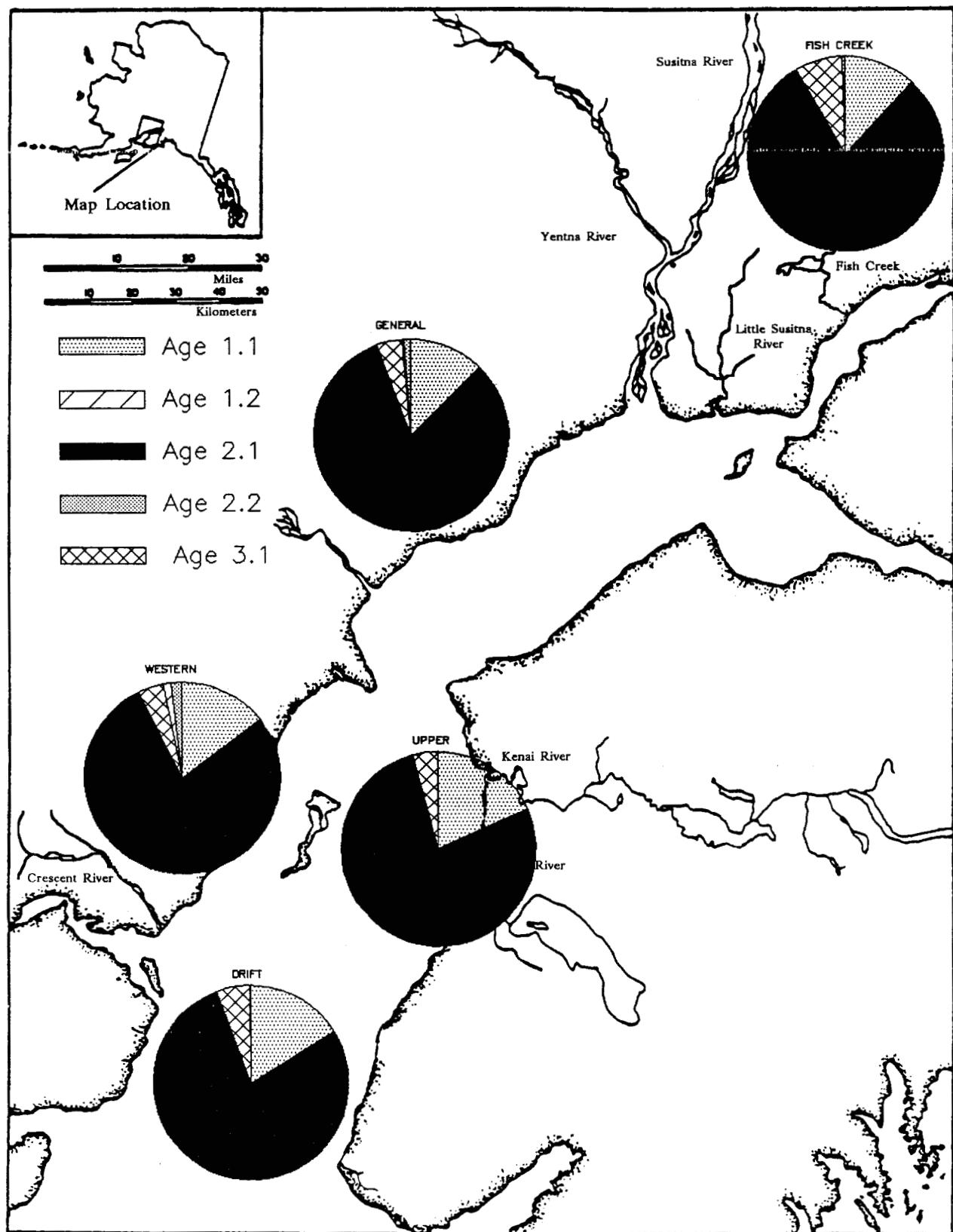


Figure 12. Coho salmon age composition in several commercial fisheries of Upper Cook Inlet, Alaska, in 1990.

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